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ORIGINAL ARTICLES.

THE EFFECT OF HYSTERECTOMY ON THE SEXUAL FUNCTION.[1]

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IT was with some reluctance that I responded to the invitation of the Chairman of the Obstetrics Section to write a paper on the subject. I fully appreciated the honor implied by the invitation, but had a strong sense of my inability, with the time at my disposal, to present the subject in a manner worthy of this body.

The whole question of sexual passion in women is surrounded with great vagueness, and it is not possible to make any definite statements regarding it.

Women, especially those in this country, are very loath to discuss matters relating to their sexual feeling, and what statements they do make in reference to it cannot always be accepted without reserve. Hence it is that I seldom interrogate my patients on that point, and further I have learned from experience that if they are really devoid of any sexual desire or pleasure they will of themselves volunteer the statement. A still further reason for my not investigating the presence or absence of the passion is that in my opinion it has very little bearing, as a rule, upon the conditions for which the patient seeks advice.

In sterility, where it is popularly held that the absence of sexual desire forms an important etiological factor, I have long ago learned that it plays absolutely no rôle. Some of the most fruitful women that I know, women with large families, are totally devoid of any sexual appetite. On the other hand, I know women with small, undeveloped uteri, in whom conception is a physical impossibility, and yet who have the sexual passion developed to a high degree.

This leads us to the question of the seat of the sexual passion in the human female.

Albert Moll,[2] who has written an exhaustive and scientific treatise upon the subject, divides the sexual instinct of the human adult into two components, (1) the detumescence instinct is that which forces to a local function of the genitals, and in man to an ejaculation of semen. It is to be considered as a purely local process, an organic stress to the discharge of a secretion, just as is the desire to urinate when the bladder is full. (2) The contrectation instinct is that which forces the man to a bodily and to a spiritual approach to the woman, and similarly the woman to the man.

Phylogenetically the detumescence is the primary means of procreation, being the only instinct present when procreation is accomplished by one parent, as in some plants and lower animal life.

The contrectation instinct is only a secondary manifestation, when a stage is reached in evolution that requires two individuals for procreation.

In women, in the evolution of the stock, the detumescence has become separated from the function of the generative glands (the ovaries), although originally both processes were united.

The detumescence instinct has its center in the lumbar portion of the spinal cord; the contrectation instinct has its center in the cerebrum.

Accepting Moll's definition as correct, we can readily understand why the sexual passion is less strong in woman than in man, an observation that has been made by several authorities. It also explains why, in woman, the individual plays a much greater factor than in man. We all know that with man it is often "any port in a storm," but when a woman betrays such a tendency we look upon it as a morbid condition known as "nymphomania."

We find in it a further explanation of the phenomenon, not infrequently observed in women, of a strong desire to be fondled and embraced, which may even be associated with an overpowering repugnance to the sexual act itself. Time and again I have had husbands tell me that the sexual act to their wives was repulsive to a degree, although kissing and tender embraces were not only enjoyed by them, but seemed to be a passion with them.

From what has gone before we are prepared for the statement, which otherwise might seem rather startling, that the removal of the uterus and adnexa from an adult woman has very little effect upon her sexual passion.

This statement is based upon the writer's own recent investigation and from a perusal of the reports of several operators. I am perfectly aware that the opposite has been the popular belief, and I will grant that the belief has some foundation. Until about two decades ago the only knowledge we had of the effect of the removal of the ovaries from the human female was based upon the facts related by travelers from countries where it was the custom to castrate girls before the age of puberty.

For instance, Ploss, in his wonderful work, entitled "Das Weib," quotes Roberts who relates in his travels from Delhi to Bombay of having seen a girl from whom the ovaries had been extir-

[1] Read at a stated meeting of the Academy of Medicine as part of a symposium upon the After-Effects of Hysterectomy, Oct. 6, 1904.

[2] Untersuchungen über die Libido Sexualis, H. Kornfeld, Berlin, 1898.

pated. The girl had no breasts, nor any hairs nor fat on the mons veneris. She had considerable hair on her chin and upper lip, and had a decided masculine appearance. She was utterly devoid of any sexual desire. Travelers in Queensland describe similar instances of removal of the ovaries before puberty with the same after-effects. It is no doubt from remembering such tales that at the present day the operator is occasionally met with the tearful query, "Doctor, if you remove my ovaries will hair grow on my face, and will my disposition change and will I become masculine?" I will not say that the belief has not found some foundation even in modern days when in the early days of gynecological abdominal surgery it was the custom to remove practically normal ovaries from fairly young girls for all kinds of nervous ailments. I am glad that it fell to my lot to become active in gynecological surgery when that wave of blind enthusiasm had entirely receded. My own experience therefore relates to cases in which hysterectomy was done for marked disease of the adnexa or for disease of the uterus, such as benign and malignant growths.

Since learning of the part I was to take in the discussion to-night I wrote to several of my patients, of the more intelligent class, whose uteri and adnexa I had removed for disease. The invariable reply was that the operation had had no effect upon their sexual passion one way or the other. Prior to this investigation, in a few instances, patients had volunteered the statement to me that they never knew what sexual pleasure was until after the operation had been performed. In a few other instances women had told me that the sexual appetite had increased in a marked degree subsequent to the operation. I can recall no instance where a woman had told me that the operation had destroyed her sexual desire or pleasure. In all of the above instances the operation was done for very advanced disease on both sides, with extensive adhesions to the pelvic floor. We can readily conceive that in such conditions the sexual act would be attended with more or less pain, and in consequence a feeling of fear or repulsion would be engendered.

Drs. Mandl and Bürger,[1] of Vienna, have recently written an exhaustive monograph on the subject of the effects following the removal of the uterus and ovaries. The effect of the operation upon the sexual passion is given by them with that fulness of detail which could only be obtained from a *clientele* who are not ashamed to discuss the sexual feelings with openness and candor. They investigated the subject in 22 women. In seven cases there was absolutely no change in the sexual passion. In nine cases there was a decrease, and in the remaining six cases there had been no sexual intercourse following the operation. Of the nine women who said there was a decrease, several were rather advanced in years and would naturally experience a diminution of the passion.

The conclusion I would draw from my own experience and from a study of the literature on the subject is that whatever other effects the removal of the uterus and ovaries may have upon the female human economy, it has little or none upon her sexual feelings.

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1 Die Biologische Bedeutung der Eierstöcke, nach Entfernung der Gebärmutter. Franz Dentieke, Leipzig u. Wien, 1904.

THE DIFFICULTIES OF ANESTHETIZATION AND THEIR CORRECTION.[1]

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THE difficulties of anesthetization necessarily comprise those arising during administration and those arising during convalescence. These two classes will be considered in the order in which they occur. The fright and misunderstanding which are at the basis of hesitating, imperfect or suspended respiration during the early stages of narcosis may be alleviated by suitable reassurance and explanation. Deliberation and care in administration will likewise correct the reflex irritation so frequently an element therein. These difficulties may arise during nitrous oxide administration and then indicate admission of air. Crying, frequently seen in children, occasionally in adults, is entirely trivial excepting during chloroformization in children, when the long inspiratory stage so frequently observed may lead to overdose. The falling back of the tongue may excite persistent hesitation of respiration even after the early stages and is best corrected by a mouth gag of moderate size and the use of tongue forceps. Muscular movements give evidence of excitement; and muscular rigidity, of an obscure nervous reaction which may be exceedingly inconvenient, especially when it attacks the masseters. Rigidity is most apt to be localized in all the extensors, and no subject is suitably narcotized until this rigidity is absent, a condition which occurs, as a rule, after the judicious increase of the drug used, although occasionally advent of air will secure it. The movements may be conscious, subconscious and unconscious, and are frequently well coordinated although not necessarily directed against the anesthetist or the apparatus. The gentlest possible restraint to overcome them is indicated, as violence is more apt to increase than to diminish them. Tonic movement analagous to the tonic spasm of asphyxia indicates fresh air or a change from ether to chloroform or *vice versa*. Clonic movement is very common, usually located in the lower extremities but rarely generalized. Brewer has reported a case in which the patient nearly shook himself from the operating table no matter what anesthetic or combination of anesthetics was employed. These muscular movements usually indicate imperfect administration, hysteria, drug habit and perhaps most commonly of all, a premature invasion of the operative field, especially if

1 Read before the Society of the Alumni of the City (Charity) Hospital, October 12, 1904.

sensitive. Cough occurs during slight anesthesia after additional drug has been applied. It is founded most frequently on a long uvula and the adenoid diathesis and what might be called the tobacco throat. It is treated by removal of the anesthetic until the individual spasm ceases and then by a gradual increase in the anesthesia or a change to another anesthetic. Here again if chloroform is used care should be exercised not to overdose during the deep inspiration after the cough. Hiccough, while of minor importance to the anesthetist, may trouble the operator through the spasmodic action of the diaphragm and abdominal parietes. It is most frequently set up by manipulation of the intestines and gall-bladder. If marked, treatment is of little avail although a brief cessation of operating followed by a deepening of the narcosis may check it.

Stertor is, far more than most operators fancy, purely a matter of valve-action between the soft palate, pharynx and tongue, being in these circumstances entirely analagous to snoring. If the mouth is held open and the tongue forward it is possible to carry a very large number of patients through etherization as quietly and as stertor-free as during chloroformization. Stertor may also be caused by mucus in the throat, being in this analagous to bronchorrhea. The prophylaxis of bronchorrhea consists in care in administration. The cure of it frequently occurs after a single large dose of atropine. The mucus should then be wiped away from the throat or drained away with gauze.

Retching and vomiting are not only difficulties but dangers because they interfere with the operator, may readily cause inhalation pneumonia and be directly followed by death, especially with chloroform. The best correction of them is to free the mouth of instruments, to allow the paroxysm to pass and then to deepen the narcosis rather rapidly and steadily. The most important single cause is intestinal obstruction during which regurgitation often without esophageal movement occurs. Rose's position is the safest for these individuals, because the stomach contents may rest in the vault of the pharynx while being wiped away without interfering with breathing. The nose also in this position frequently will allow the vomitus to flow out while the patient breathes through the mouth. Hewitt recommends turning the patient slightly upon the side so that a similar reservoir is obtained in the lateral regions of the nasopharynx. Sneezing may occur as a minor difficulty dependent upon a chronic hypertrophic nasal catarrh. Cocainization is the indication.

We now pass to the major difficulties, properly the dangers, of anesthetization. Respiration may be occluded by altered position, spasm, swelling of the parts within or around the upper air passages, such as falling of the lips together in the edentulous, apposition of the turgescent tongue, soft palate and pharyngeal wall, and spasm of the jaw, larynx or chest. Each condition carries with it self-evident indication. The swelling of the mouth contents is the most common. The average case does better with mouth gag and tongue forceps than without. Adventitious substances, too numerous to mention, may likewise obstruct breathing. The most common are blood, vomitus, mucus, tooth plates and the like. Removal of the offender is required, but tracheotomy may be the only means of rescue. For this reason it is good practice never to attend an operation as anesthetist without a full tracheotomy set. Posture may arrest breathing by direct prevention of chest expansion; for example, the prone or semi-prone position in kidney cases, in which the chest should be elevated from the table by a sandbag across the clavicular regions from shoulder to shoulder, as pointed out by me in an article upon this subject about a year ago. Morbid states like ascites, empyema, pleurisy and hydropneumothorax are also elements in obstruction of respiration. After considerable experience the writer believes that the average case of ascites, empyema or pleurisy will take the anesthetic with comparative safety, if the fluid is drawn some hours before the operation, thus removing the obstruction so far as possible. Operations upon the thorax and abdomen may cause a reflex arrest of breathing which is very difficult to deal with. The writer has never seen more than trivial cases thereof, which improved as soon as the operating was suspended. Paralysis of breathing may be wholly or partially due to overdose, almost always comes on slowly and is shown by a progressively shallower and shallower respiration, finally by irregularity and then by cessation. Sometimes the arrest is sudden as in chloroform, but is usually preceded by circulatory symptoms. Shallow breathing with good color, a strong pulse and normal pupils, which continue so is a good sign; whereas shallow breathing with pallor, cyanosis, rapid uncertain pulse, dilated fixed pupils, inefficient capillary circulation, is a sign of impending death from the anesthetic. The anesthetic should be immediately removed, and free stimulation and active artificial respiration resorted to. Hewitt suggests rubbing the lips vigorously from side to side upon the teeth as efficient means of causing deep respiration. The author has tried this on several occasions and has not been pleased with its results.

Respiration may be paralyzed by causes other than overdose of anesthetic; for example, chloroform may so lower the circulatory pressure as to produce profound cerebral anemia; similarly, changes in posture especially from the cerebral turgescence of Trendelenburg's position followed by the anemia of the horizontal position, or the horizontal followed by the sitting posture. What may be called changes in the mechanics of the circulation are exceedingly dangerous from this one source. A preliminary dose of morphine may add to the danger. Absolute inhibition of respiration may occur and is said to be common in adenoid and tonsil cases under chloroform. Such

cases must be rare where there was not some mechanical obstruction to the larynx such as by blood. Removal of this quickly restores the patient. In every such case the anesthetist should open the mouth widely and pass his finger into the cavity of the larynx to explore for the presence of offending foreign objects. Stimulation, artificial respiration and infusion will probably do the rest if there is any hope for the patient.

The circulatory dangers of anesthetization are perhaps less important than the respiratory, excepting such as are inherent in chloroform. Impairment of health in general, as seen in anemia, jaundice, nephritis, hepatic cirrhosis and grave respiratory diseases predispose to them, as do fear, the sitting posture, and food and fluid in the stomach. These circulatory dangers may be directly caused by any of the impediments of respiration previously enumerated, by the direct effect of the anesthetic as chloroform, by the surgical procedure itself, especially perhaps in the neck and the regions of the stomach, and finally by the changes of blood pressure during vomiting. The author has never seen a sudden case of cardiac failure excepting in a soldier already moribund from typhoid fever contracted in Cuba during the Spanish-American war. He was being anesthetized for a laparotomy for perforation. The medical staff requested interference; the surgical did not wish to undertake it, but yielded. The man died suddenly in the etherizing room after a few whiffs of anesthetic. In other cases circulatory difficulty was always indicated by failure of capillary efficiency. This is tested by squeezing the blood out of some convenient point and watching the promptness of its return. No points are better than the finger nails, lips and the malar regions and the lobes of the ears. The finger nails are first choice because the anesthetist may always compare his own capillary circulation with that of the patient. If there is a distinct slowness, it has been the writer's practice to stimulate and never has regretted following this indication. As a precursor of shock it appears before the nose is cold or the skin even slightly moist with perspiration. It appears before one could be certain of changes in the quality of the radial or temporal pulse. It usually precedes even acceleration of the pulse and taking all in all in the *sine qua non* of circulatory tests.

Cyanosis may have its origin in respiratory or in circulatory factors. When due to respiratory conditions it may arise from absence of air, laryngeal spasm, concentration of vapor, direct obstruction of the upper air passages, interference with respiratory movements of the chest through factors in the chest or in the abdomen, like empyema, edema of the lungs and ascites. The correction of these conditions has already been enumerated under other headings, and need not be repeated excepting, perhaps, the dictum that the upper air passages should always be most carefully explored with the finger and when no proper cause is found auscultation of the chest must immediately be done. The writer has had the privilege of saving one subject from death from edema of the lungs by exactly this step. Circulatory cyanosis may mean, of course, imperfect aeration but usually means flagging heart. It is always accompanied by inefficient capillary circulation which constitutes the chief differential diagnostic point between pure circulatory and pure respiratory cyanosis. Free cardiac stimulation is required.

The difficulties of convalescence from anesthesia is a subject which most authors neglect. In my opinion proper care during the first twelve hours of recovery is equal in importance to skilful administration. The features of recovery may be stated as dependent upon the duration of the operation, the amount and kind of anesthetic employed and the character of the administration. For example, the average patient should be able to talk coherently in about fifteen minutes after withdrawing the anesthetic, no matter what the character or nature of the operation may be, because the skilful anesthetist will so vary the degree of anesthesia as to make this possible. On the other hand, the author knows of a case that did not recover for seven hours from the anesthetic because a veritable tyro administered nearly twenty ounces of ether in less than an hour, notwithstanding the fact that the patient was a temperate individual. Hewitt recommends that on return to bed if the pathological condition permits, the patient should be turned upon the side. The tongue then drops to that side of the mouth, the air passages open, stertor ceases, mucus and saliva gravitate out of the mouth and not backward into the throat and coughing is prevented because the tongue, soft palate and pharnyx separate and because mucus leaves the mouth of the larnyx. A competent nurse or the anesthetist should stay with the patient until distinct signs of recovery are present in order to institute restrained stimulation or other treatment as need may arise. Pallor and feebleness of pulse may show shock but will then be accompanied by cold extremities and nose and feeble capillary circulation. They are more apt to mean threatening vomiting or the result of withdrawing a stimulating anesthetic as is the case with ether. The question of nourishment during convalescence may be difficult, especially if the patient is suffering from protracted vomiting. The best treatment for the general run of cases is to allow the patient all the hot water he will drink. If inclined to vomit he has the substance present to eject which is very much less damaging nervously than dry retching and at the same time the water washes the stomach free of the ether-laden mucus. Food may be given as soon as the patient expresses real appetite for it, and should be fluid and predigested for the first twenty-four hours. Food in the stomach prior to the administration of the anesthetic, the character of the

anesthetic used, especially ether, personal idiosyncrasy, the nature of operation, particularly intestinal organization, are factors in the after-vomiting. In the protracted case perhaps the most sensible thing is lavage.

Finally, in closing, one detail should be emphasized which is very largely neglected, especially in institutions, and that is not to expose the patient so as to endanger a check of the perspiration, which is usually profuse and always present during recovery. The best recoveries occur when the patient is wrapped in several thicknesses of blanket from head to foot, leaving only the face exposed and thus constituting a veritable hot pack. When the patient is fully conscious he may be uncovered part by part, rubbed down with a bath towel and dry clothing applied. This procedure renders congestion of the lungs unlikely and, in fact, tends to relieve congestion of the kidneys also. The writer has practised it now for two years in all cases and has yet to see the slightest objection to it.

HYPERACUTE MELANCHOLIA: REPORT OF A CASE.

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SINCE M. Baillarger demonstrated stupor to be the highest expression of acute depressive insanity, it has generally been so considered by the French school of which Prof. Régis, of Bordeaux, is in this country regarded as the modern exponent. To this latter author we are indebted for the term "hyperacute melancholia," a condition which he declares stands in the relation to melancholia that acute delirium does to mania. He further states that "the majority of foreign authors recognize and describe under the name of attonität and of katatonia (Kahlbaum), conditions which are fundamentally, as Séglas and Chaslin have recently demonstrated, nothing else than melancholia with stupor, under its different aspects and in which predominate either the phenomena of hebetude or spasmodic and cataleptic symptoms." With this conception of the psychosis, the following is the report of our case:

Mrs. R. L., aged twenty-four years, white, married six years, has three children, age of youngest ten weeks, high school education, member of Christian Church, admitted to hospital June 26, 1903, the disease having existed 2½ months prior to admission. No history of heredity of psychosis or neurosis; assigned cause ill-health and puerperium; last confinement was on April 17, 1903; previous to this she was delusional. Patient was very melancholy and restless; not suicidal or homicidal; had delusions of unworthiness that she had lost the key to heaven and had committed the unpardonable sin; at times she was very gloomy and restless and required restraint.

When admitted, she was in a condition of marked motor and mental unrest, with pronounced depressive features; the symptoms were progressive and in a few days the clinical picture presented was that of melancholia agitata—marked bodily unrest, wringing of the hands, crying and moaning, walking aimlessly back and forth in her room and voicing delusions of painfully depressed, gloomy and self-depreciatory contents. This state persisted for a week and was followed by a progressively deepening stupor.

At this time the physical condition was as follows: Temperature 98° F., pulsus melancholicus typical, 100 to 110 in the morning, mounting to 120 in the afternoon without a corresponding temperature excursion; peripheral circulation sluggish, hands and feet cold and violaceous; heart-impulse weak, no murmurs, action regular; cutaneous and mucous surfaces pale and anemic; skin leaky and covered with an ill-odored, oily perspiration; lips dry and covered with brown crusts and the teeth with sordes, resembling the typhoid state; pupils react very sluggishly to light and accommodation; patellar reflexes notably heightened as in paresis; facial lines obliterated, expression blank, with occasional painful alterations; mutism absolute; mental and physical negativism marked; tongue heavily furred and coated; bowels obstinately constipated; involuntary micturition and defecation.

The mental condition at this time was that of profound stupor—the acute dementia of Esquirol. Consciousness was deeply clouded, with amnesia for the stuporous period—the acme or critical stage of the disease—which persisted for twenty-six days. During this time, the patient lay prone in bed, immobile and resistant and requiring to be medicated and fed with the feeding tube inserted through the nose.

One week after admission, acute bronchitis developed and persisted for ten days, during which period there were the ordinary constitutional disturbances, and, in the latter stages, a large amount of mucopurulent expectoration. The debilitating effects of this pulmonary incident, superimposed upon the already cerebral asthenic state, doubtless were influential in prolonging the mental disease.

From admission, June 26, 1903, to July 13, 1903, a period of seventeen days, there was persistent insomnia, the patient obtaining but one or two hours of broken sleep during the twenty-four hours. It will be observed, however, that the attack of acute bronchitis above mentioned, and the insomnious period were coincident—a fact not unworthy of mention when we speak of the agrypnia.

And here let me advert for a moment to the subject of hypnotics in psychiatric practice. It seems we are not employing an altogether rational, but rather an empirical therapy in this direction. Speaking from the vantage ground of four years' experience among the insane, where one would reasonably expect to meet with the

more aggravated and obstinate forms of insomnia, I would say that the continuous employment of the narcotizing and depressing agents usually administered during the acute stages of insanity has proved of doubtful utility, and in some instances has produced pronouncedly baneful effects, such as a prolongation of the psychosis and an increased tendency toward secondary dementia, effects like those produced by the earlier methods of treatment of insanity, namely, purgation and blood-letting, that is to say, depressing and debilitating measures. So I would say, be very sparing with hypnotics, chloral, hyoscine, sulphonal and their many kith and kin. Only in the severer grades of insomnia are these agents admissible, for they are toxic, potent and depressing.

The reason why they are not admissible is not far to seek; it is because the conditions with which we are dealing are conditions of cerebral fiber and cell intoxication (from gastric and intestinal auto-intoxication) and inanition as well—the cells and fibers of the central nervous system are bathed in the already toxic and débris-laden fluid of the perivascular spaces and lymph-cisterns; consequently there is a true phrenasthenia—brain debility; hypnotics are all in some measure depressant and are therefore contra-indicated in these states of brain-tissue exhaustion and weakness. Think of administering aconite to a subject with fatty degeneration of the heart or with advanced chronic myocarditis! Think of administering the coal-tar derivatives to subjects of senile pneumonia! Can it be that we are practising the Hahnemanniac folly, "*similia similibus curantur*" by treating depressed states with depressants? When the genesis and causes of insomnia are better understood, it may be that hypnotics will be less frequently and more rationally exhibited.

During the night of July 27, our patient was restless for about two hours in the latter part of the night; with this exception, she was never reported by our night watches as awake at night from July 13 until convalescence. From August 1, improvement became noticeable and progressed slowly to ultimate and, so far as her husband and myself could determine, complete recovery, the psychosis having persisted for four months.

Treatment consisted of measures calculated to improve the general health, to overcome the anemia—the erythropenia and oligochromemia—to flush the convolutions with a better aerated and nutritive-laden blood-stream; to supply the wanting nerve-elements phosphorus and fats; to aid the system to eliminate the products of convolutional and central-fiber disease, namely neurin and cholin and allied toxic débris; and to remove by appropriate measures, fecal and urinous accumulations, the results of the profound melancholic inhibition.

To be more explicit, treatment consisted in the administration of the elixir of iron, quinine and strychnine, and the combination of cod-liver oil and extract of malt given with warm milk—an emulsion not unpalatable and of the highest nutritive value. As a laxative and cathartic, a mixture of the fluid extract of aloes and elixir of cascara, with occasional doses of magnesium sulphate was employed, never permitting the bowels to go longer than two days without a movement. Tube-feeding was practised twice daily for a month, rendered necessary by the persistent paralysis of appetite and muscular and mental negativism.

One fixed idea we kept steadfastly in mind, namely the disease is one of inanition; in the language of Berkeley, "nutritive disturbances of the cerebrum being the principal causative factor (*i.e.*, of melancholia) psychical distress and a sense of woe and uneasiness are the ways by which the brain expresses its lack of proper nourishment;" and, as Romberg long ago declared, "pain is the prayer of a nerve for better blood." Melancholia, we believe, is the wail of an exhausted brain. Therefore along with an abundance of nutritious food, we gave hematics and stimulants, not only to improve the quality and quantity of the blood, but also to force it in more abundance to the starved nerve-centers; and for this latter purpose a combination of synergistic cerebral stimulants was employed, consisting of caffeine citrate, spts. frumenti, and quinine sulphate. Convalescence was slow but noticeable and in four months our patient was recovered. The usual duration of this, the gravest of the various forms of acute melancholia, is from six months to a year and a half in recoverable cases.

We believe, with Shoemaker, that "therapeutics is the superstructure of medical training," and we are endeavoring daily to practise a more rational therapy—with failures, yes, more than enough, but with many happy successes, of which this is a noteworthy one.

Concerning the pathology of this form of psychosis little is known. Edema of the brain has been said to be its characteristic lesion. W. Bevan Lewis' tables are of interest in this connection, as regards the blood-states of stuporous adolescents; he found the hemoglobin reduction ranging from 55 per cent. to 90 per cent.

Berkeley writes: "Nothing definite is known of its pathology (*i.e.*, of melancholia). In chronic cases there are evidences of old anemias, venous congestions of a passive form, edema of the pia and of the brain substance, and even general atrophy of the convolutions."

Whitwell's observations, consisting of "careful measurements of the blood vessels at the base, by the graduated cone, led him to infer the presence of a congenital narrowing of their lumen, associated also with a universal cardiovascular enfeeblement."

David Orr's work, reported in *Brain*, Summer Number of 1902, is a valuable contribution to this comparatively unknown subject of psychopathology. His findings in a case of stuporous

melancholia which came to autopsy were in part as follows: In a section taken from the fronto-parietal cerebral cortex "the great majority of the large and medium pyramidal cells are readily seen to be affected by a central chromatolysis associated with pallor of the nucleus." He also noted "a well-marked perinuclear chromatolysis of the large cells of the anterior cornua" of the spinal cord at its cervical enlargement.

Etoc-Demazy considers general cerebral edema the fundamental pathological change in this condition, as recorded in his classical thesis "Stupidité."

Whatever its pathology, the treatment of this disorder is fairly well understood and consists of tonics, alteratives and eliminants, overfeeding, baths and open-air exercise and the employment of every safeguard against suicidal and homicidal attempts; and, when convalescence is advancing, encouragement and light pleasurable mental diversion are certainly beneficial in hastening recovery. This we consider a rational therapy which, like "Wisdom, will be justified of all her children."

THE FINSEN METHOD.[1]

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IMMEDIATELY after the introduction of the Finsen method of treating tuberculous diseases of the skin by exposure to the ultra-violet or chemical rays of the spectrum, there arose upon all sides experiments and suggestions with a view to its improvement.

The first apparatus consisted of hollow glass lenticular bodies, filled with water, or weak solutions of cupric sulphate, or pyoctanin. These huge lenses were supposed to fulfil the double function of concentrating the rays of the sun and of absorbing from among them those rays which produced much heat and little chemical action.

It was soon discovered that these glass flasks were impervious to the very rays upon which the efficiency of the system depended, and that the quantity of chemical rays ultimately reaching the patient was so small as to threaten the method with practical failure. At the same time it became evident that no dependence could be placed on the sun as a constant performer, the number of cloudy days on which no work could be carried out proving considerable; and that the absorption from the solar spectrum as evidenced by the Frauenhofer bands left a light in which the chemical rays were not predominant. It was also found that colored solutions absorbed the chemical rays in great quantities.

After fully establishing that no glass produced at the time was capable of transmitting the ultra-violet rays in suitable quantity, it was determined to make use only of rock crystal in the construction of the machines used in the Finsen Institut, and of distilled water in the coolers.

The largest obtainable lenses of rock crystal were about 3½ inches in diameter, and those of that size were extremely rare. The available diameter of the lenses (MEDICAL NEWS, September 20, 1902) determines in a great measure the value of the apparatus. The voltaic arc was found to fulfil all the conditions of constancy and high ratio of chemical rays.

Finsen then devised the familiar form of lamp which has been associated with his name and method. It consisted of an arc lamp of fifty ampères capacity, suspended vertically. Around this were disposed four telescopes so arranged as to collect each a portion of the light generated in the arc, and pointed outward and downward, the axis of each telescope lying in a vertical plane forming an angle of 90 degrees with that of the next adjacent. At the proximal end of the telescope was placed a lens whose function was to refract the divergent rays from the arc into a parallel pencil within the barrel of the telescope where there was a quantity of distilled water through which the light passed, and in which most of the heat radiation was absorbed. At the distal end was a system of lenses which caused the rays to again converge into a focal point of about one-half inch diameter, and at a distance of three inches from the end of the telescope.

In this lamp there were inherent many defects of principle; chief among which were the great distance of the condensing or collecting lenses from the arc, rendering the amount of light utilized in each telescope very small; great length of telescope, with long air spaces; and faulty disposition of the axes of the telescopes, failing to collect the light at the angle of greatest intensity.

This was, however, the first practical lamp, and with it the method was initiated. There was manifested on every hand a disposition to criticize the imperfections in the Finsen apparatus and to substitute other designs, which were alleged to possess features of superiority over the original.

The necessarily great duration of the treatments, one and one-quarter hours, and the cost of installation and current were the cause of much adverse comment. Most of the new apparatus suggested was for the purpose of so economizing the energy by superior physical design that much smaller lamps could be used, and at the same time the result be obtained in shorter periods of exposure.

Among the more noticeable of the improvements was the lamp invented by Sophus Bang, then an assistant in the Finsen Institut. The original contained a small arc of three ampères capacity maximum, supplied with iron electrodes. The smallness of the light was compensated for in the nearness of the arc to the surface to be treated, and in the simplicity of the optical system, which consisted of a single quartz disk.

[1] Read before the Clinical Society of the New York Polyclinic, October 3, 1904.

The elimination of heat was effected by the ingenious expedient of rendering the electrodes hollow and causing to flow within them a stream of cold water. In this way a light that was quite cold was obtained. This lamp produces a cutaneous reaction in fifteen minutes. The quartz disk was used as a compressor by being applied with force to the skin, thus reducing the armamentarium to its simplest dimensions. The selection of iron for the electrodes resulted from the fact that the spectrum of iron contains lines further up in the ultra-violet than that of any other commercially obtainable substance.[1]

The Bang lamp was the type of numerous others, principally the Kjeldsen and the Dermo.

Another type was that invented by Lortet & Genoud and variously imitated by Foveau de Courmelles and others, in England and in this country. This consisted of an arc of 15 ampères capacity, having the carbons set at an angle of 90 degrees and placed behind a double metallic shield, between the layers of which circulated cold water. Each layer of the shield contained a small window in the center, completing that part of the water bath. The arc was placed directly behind the posterior window. The advantages claimed for this lamp were that the proximity of the light to the area to be treated rendered larger capacity needless, lightness and elimination of the difficulty and expense of procuring large rock crystal lenses. The outer disk was pressed against the lesion, thus serving the office of compressor.

Perhaps the most important of all these modified lamps was the spark-gap lamp suggested by Goerl and perfected by Professor Piffard. This, in the latter form, consists of a holder of vulcanite on which are mounted small iron spheres between which are air spaces. The two outermost of these are connected with the terminals of a capacity which is in communication with a static machine or coil. When the latter is operated a continuous stream of brilliant discharges takes place between the iron spheres emitting an intense light with little heating and possessing what is probably the greatest known photochemical action. In front of the spark-gaps is placed a rock crystal disk which, when pressed against the lesion, furnishes the required compression. This lamp gives a reaction in a shorter time than any other, ten minutes or less, sufficing in most cases, to cause a dermatitis.

I omit descriptions of many ludicrous machines produced in this country. Suffice to say that any machine employing glass in any part through which the rays are obliged to pass, is faulty in theory, for notwithstanding the statements of the makers to the contrary, there is no known formula for glass that will transmit the ultra-violet rays in quantities practical for utilization in photo-therapeutic practice. The so-called ultra-violet vacuum tubes to be found in the catalogues of many makers are the fruit of ignorant hypothesis and not worthy of serious consideration.

With all these methods of reducing the cost and duration of the treatment, and of increasing the efficiency of the apparatus and treatment generally, it is remarkable that the Finsen method has steadily declined in the amount of attention attracted to it in different countries. From having been heralded as the most remarkable and important medical discovery of the age, it has gradually fallen into disuse until, to-day, there are many erstwhile enthusiasts who are ready to admit that they have failed and abandoned the method.

In a recent trip abroad, I had the opportunity of seeing much of the work that was done at the Lysinstitut at Copenhagen. What I saw there has given me an entirely new view of the whole Finsen method, and explained to a great extent the cause of its decline in other countries. Here alone of all the countries where it has been tested, have they never lost sight of the primal reason for which it was invented. The original idea, to cure lupus vulgaris by means of the chemical rays of light, has been steadily adhered to, and the result is that they have achieved a success that is certainly remarkable. The number of cases in which they fail is negligible, and may be confined to those of long standing where the skin is impaired beyond regeneration.

The treatment has been continued with the faith, not of the fanatic, but of the scientific logician who recognizes no difference between theory and practice, where the theory is sound.

In my estimation, the reason why interest has been lost in the Finsen method outside of Denmark is to be found in the fact that the host of those who have taken it up have been ill prepared to grasp a subject whose accurate understanding required a knowledge of the physics of optics and electricity. With such a knowledge many of the ridiculous errors in designing apparatus would never have been made. In the constant endeavor to simplify the apparatus, the method has departed far from the original principle.

At the Finsen Institut constant efforts were made to simplify the apparatus, but nothing was accepted without having proven, in fact as well as in hypothesis, its superiority. The reason for their success is that they retained the old imperfect apparatus which, by the way, had demonstrated that if given time it would do the work, instead of accepting on the word of the enthusiast every little toy that was heralded as better than the original.

Much skepticism and lost interest in the method is due to the misguided desires on the part of the ignorant to invade all fields with the

1 The least wave length of any iron line is 2983.649 and the intensity is 0000 N (Rowland). The shortest line of any appreciable intensity is the 2990.523 line with an intensity of 1. From there to the 3047.725 line, whose intensity is 20 N, and which is the most important iron line in that part of the spectrum, the iron lines are numerous and vary in brightness from 000 to 4 or 5 and even 10 in the 3037.510 line. There are other shorter wave lengths of other substances, but they are of lesser intensity.

light. At the outset, the too well-known tendency on the part of some persons manifested itself in the premature publication of pure hypotheses having no basis in experiment, and not even the substructure of sound physical theory. The lay press has fostered this tendency in its quest for sensation, and the result is that much of what was promised for the sunlight panacea has not materialized, and the interested spectators of the outcome are disappointed and inclined to regard the whole as a failure.

At the Finsen Institut there has been no wild speculation as to fabulous cures. The abstruse education and knowledge of the director forbade any fanaticism. The treatment was originally invented for the cure of lupus vulgaris, and that fact has never been forgotten. At the Finsen Institut there has been more experimenting on different diseases than anywhere else in the world, but nothing was claimed until it was absolutely proven. At the same time a lot of futile experiment was saved by the fact that the man in charge was fully familiar with the principles of the science.

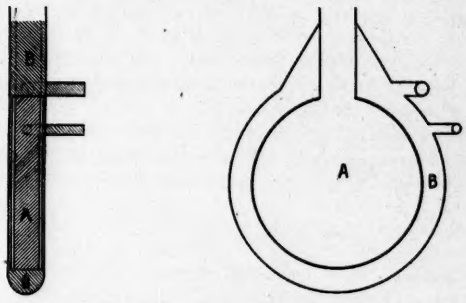
The Institut at Copenhagen has been the scene of incessant research on the subject of the improvement of apparatus. Every logical type of lamp suggested elsewhere was carefully tested and rejected only after proving inefficient.

At present there are two lamps used at Copenhagen, which are unquestionably efficient and possess all the advantages of economy and celerity consistant with the physical limitations represented by material obtainable. These are the Finsen and the newer Finsen-Reyn lamps. The former is to be preferred in institutes and hospitals where a large number of cases are treated, and the latter, where the number is small.[1] The principle upon which these machines is based is that no known glass is capable of replacing the rock crystal for transmitting the chemical rays, and that therefore every economical machine must be no larger than the size of the quartz lenses obtainable warrants.

Experiment has demonstrated that at an angle of 56 degrees to the axis of the positive carbon, the rays are more abundantly distributed than at any other at which they may be conveniently collected.[2] In both lamps the optical systems are arranged at this angle. The Finsen-Reyn possesses some latitude of adjustment in the barrel, useful in the smaller lamp.

The larger lamp consists of a 50-ampère arc, with four telescopic tubes containing optical systems, as already described. The improvements consist in having the tubes inclined at the angle of greatest intensity of the rays, and in having the condensing lenses as near the arc as their diameters will permit. The cooling apparatus is improved and merits description. The outer component of the condenser consists of a hollow disk-shaped chamber of rock crystal. (Fig. 1.)

Fig. 1.



Details of Cooling Chamber.

Water is contained within (A, Fig. 1), which does not circulate. Around the edge of the chamber (b, Fig. 1), running water absorbs the heat from the still water. In this manner, flowing water in the path of the rays is eliminated. An important consideration, as demonstrated by experiment.

I give a brief description of the Finsen-Reyn lamp (Fig. 2), one of which I have secured from

Fig. 2.

Finsen-Reyn Lamp.

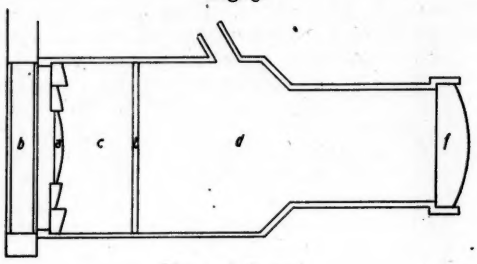
Copenhagen, it being of interest to practitioners in this country, where lupus cases are not numerous. Its small size, high efficiency and low current consumption recommend it. This consists of an adjustable iron base upon which is mounted an optical table about 22 inches long. At one end of this is an arc of 25 ampères capacity. This is fully adjustable and automatic. The carbons are inclined to each other at an angle of 120 degrees, the upper forming an angle of about 56 degrees, with the optical system (Fig. 3) mounted at the other end of the table. This is a barrel 10 inches long, mounted on trunnions in a swivel, and containing the lenses and

[1] The ratio of efficiency is greater in the smaller lamp than in the larger (about twice greater, for with a current of 25 ampères, the effect is equal to that in the larger machine in each telescope with 50 ampères, but the total economy of the larger machine with four tubes, is twice greater than that of the smaller with but one).

[2] This is not the best angle intrinsically, but the best at which the rays can be collected in a practical lamp.

cooling apparatus. The condenser is guarded by a cooling chamber similar to that of the large Finsen lamp (*b*, Fig. 3), the thickness of the layer of water being three-quarter inch. The

Fig. 3.



Plan of Barrel.

condenser (*a*, Fig. 3) is composed of concentric sections of rock crystal cemented together. Each section has a different focal length, thus securing a greater critical angle and collecting more light than would be possible with a simple lens. Between this and the large chamber is an air space (*c*) two inches long. The large cooling chamber (*d*) is six inches in length. The water in this is not changed during treatment. At the initial end of this chamber is a flat disk of rock crystal (*e*), and at the distal end is a convex lens (*f*), which brings the rays to a focus at 2½ inches from the instrument. All the lenses and disks are of rock crystal, and have a clear aperture of 3¼ inches. The light is delivered by this machine at a temperature of 110° F., and is further cooled in the circulation of a compresser of the ordinary type.

The objection is offered at the Finsen Institut that all forms of lamp employing high tension sparks and iron arcs give only a violent superficial reaction of such severity that the treatment must be discontinued after a short time. The light from these does not penetrate, and when the surface burn heals, the nodules are far from cured. This accounts in a great measure for the numerous recurrences that have been observed in cases supposed to have been cured by the X-ray and iron and spark lamps. It is certain that a material period of time is absolutely essential in the treatment, and that any attempt to curtail this results only in violently affecting the upper structures at the expense of those deeper. The successful practice of the method requires a slow, even, effect gotten through a great depth of tissue. Nature requires a measured length of time to react to the stimulus of the rays, and this cannot be shortened.

Of the modified lamps, that due to Professor Piffard is, as has been already stated, the most important and successful. But the results have been almost altogether in cases of lupus erythematosus and other superficial conditions. In fact, it may be said that for lupus erythematosus, the results obtained by this form of apparatus are far superior to those obtained by the Finsen lamp, and the recent discovery of a new form of radiation in his lamp by Dr. Piffard, may lead to further development along these lines.

In conclusion, I think that the Finsen method when properly practised, and this necessitates the employment of suitable apparatus free from glass and of sufficient power, is superior to all known procedures for the treatment of lupus vulgaris. This opinion is the result of a close observation of the results obtained at the only place where the method has been properly employed. The use of the X-ray has been too limited to warrant the positive assertion that it is a specific in lupus. The cases that have been positively cured by the Finsen method are almost without number, while those cured by the X-ray are few and scattered, and their authenticity shrouded in uncertainty. It may be that we shall finally find a valuable therapeutic agent in the high-frequency currents, but in the meantime we have the ultra-violet treatment of Finsen.

112 West Forty-seventh Street.

THE ANTISEPTIC TREATMENT OF THE PUERPERAL WOMAN.[1]

BY LOUIS KOLIPINSKI, M.D.,
OF WASHINGTON, D. C.

Ars summa, materiâ optimâ melior. Quintilian.

THE woman delivered of the new-born child is a surgical subject, the victim of wounds of the contused and lacerated varieties of the uterine cervix, the vagina and its outlet. They may be extensive, they may be slight, they are always present. These injuries, when not protected by art, are the chief cause of puerperal infection, septic, puerperal or childbed fever. This fever with a misinterpreted, voluminous and controversial record has of late years diminished much in mortality, but, as some say, not in morbidity, due to anomalous methods of prevention and treatment. In principle these methods are more or less correct, namely the existence or maintenance of the state of local asepsis. This condition is achieved in part by the protective power of nature over the woman, the acid state of the vagina, in the sterile lochial discharges expelling minute organisms or yielding but a barren soil for growth, and is further secured by the antepartum cleansing of the patient, local and general, by the cleanliness of the nurse, by the attention to the clothing, the person, the hands and the instruments of the obstetrician. Further the injuries are to be kept germ-free postpartum by a cleansing of the external genitals, by a single vaginal douching to remove blood and clots, by the use of vulvar pads or lochial guards, frequently replaced, and by an occlusive dressing. This much and so far, in the opinion of the writer, is not enough. The fact remains that a superficial torn wound of this or any other

[1] Read at the Therapeutic Society of the District of Columbia, October 8, 1904.

part of the human body requires surgical treatment, which is in its action both curative and preventive of any other pathological process. One of the best, in thoroughness and efficiency, is irrigation, which embodies the essential act of drainage.

Douching the vagina is a form of this. It has been extensively tried on the lying-in woman and has been generally abandoned as both inefficient and harmful, productive of the very complication it was intended to keep away, and increasing the death-rates of obstetrical hospitals in a marked degree. It has grown to be feared as a maker of mischief almost as evil as when used intra-uterine or as is the curette when septic fever is active. Nevertheless the principle of the occlusive vulvar pad, in theory and collateral experience, has not much to commend itself when the problem of treatment is the prevention of the infection of a wound so prone thereto as is that of the woman just delivered; from its location, position, its anatomical and physiological surroundings.

Again, the minute and exact details of precaution to which the physician subjects himself, the nurse and his implements are very much overdone and overtrusted. A wound that is under the full stream of an antiseptic fluid cannot be infected by the accidental contact of the attendant or an instrument in its ordinary state. The mode and vehicle of contagion is the ordinary and every-day contact and exposure of a wound not protected and preserved, and not the rare and extraordinary modes of inoculation, such as from hands contaminated in the dissecting room or at an autopsy. This insistence on the unusual was perhaps the chief cause of the want of appreciation shown the discovery of the unfortunate and derided Semmelweiss.

In the treatment of a wound by irrigation where tissue is necrosed, half dead or of low vitality, the liquid in its general or local action must not be poisonous and its quantity must be unlimited. Its action must be like the continuous flow of surgical practice. Undoubtedly the unhappy attempts at vaginal douching were and are due to blunders in these fundamental requisites. Such blunders are: First, the use of corrosive sublimate, of carbolic acid or of some of its pseudo-scientific substitutes, and, second, expending a very limited supply.

The writer has used antiseptic douching in normal puerperal cases, and the effects are found to be in every way satisfactory, both in the feeling of general comfort to the patient and in the avoidance of septic fever or its speedy destruction. He has followed the rule that it is better to flush with too much rather than with too little, and accordingly the method consists in washing out the vagina, the cervix, and the vulva, the patient being in the proper position, with a gallon of a solution of boric acid in boiled tepid water, made in the proportion of a heaping teaspoonful (1½ drams) of the powdered acid to the pint. This is repeated three times a day for the first week and then discontinued altogether. Septic fever has not been found to appear in any normal case, and the patients are very well satisfied, particularly so when the purpose of the douching is explained in the beginning. The antiseptic vulvar pad is dispensed with or its use left to the discretion or wish of the nurse or patient.

Boric acid is the most suitable antiseptic, as it has none of the objectionable side effects of other therapeutic bodies of its kind. Its superior suitability can be admitted without argument, and it is the active agent in a number of much used and much advertised nostrums of the "ethical" kind.

To achieve a satisfactory afebrile course in a lying-in woman, barring, of course, the normal rise of one degree and a fraction, three douches a day are sufficient. Two will be found to answer one's ordinary expectations, but four repetitions are not too often, and make the result all the more sure.

To conclude, the writer would wish the much-blamed, much-mistrusted antiseptic vaginal douche in the puerperium not to be completely damned on its past record, but to be used with confidence, by those so inclined, in the way here described, after the manner of a prolonged irrigation and in a quantity neither scant nor limited.

It is a very doubtful statement to maintain that in the obstetrical or in any other practical medical art, nature should be entrusted in civilized life with the care of the patient to keep her free from fever, as nature is unfortunately much more often the cause of fever than is man.

CEREBRAL PALSIES IN CHILDREN.[1]

BY J. M. AIKIN, M.D.,
OF OMAHA, NEB.

THE palsies of children naturally fall into one of two types, clinically known as cerebral and spinal. We see them as hemiplegias, diplegias and paraplegias. The spinal type is so well known clinically and pathologically that I will not refer to it except for differential diagnosis from the cerebral type.

The seat of the lesion in the cerebral palsies of children, as in the adult, is in the brain. It is in the central motor neurons, and in the part of the brain that connects the cortex to the spinal anterior horns. Dana very aptly names these tracts corticospinal neurons and reserves the name neurospinal neurons for the parts degenerated in the simple spinal palsies of childhood. Statistics are not available for accuracy of statement on the relative frequency of cerebral palsies in childhood and adult life. The frequency of cerebral as compared to spinal palsies in childhood, however, is about equal. Our best reports give relatively as large a ratio of cerebral palsies in childhood as in adult life. At first thought

[1] Read before the Omaha (Douglas County) Medical Society, at Omaha, Neb., Sept. 27, 1904.

this statement may seem wide of the truth, but analysis of the etiological factors will, I think, relieve all doubts.

Cerebral palsies in childhood are resultant to prenatal defects, birth accidents and postnatal causes. The vast majority occur during the first three years of life. About one third are congenital in origin; that is, the child is born with cerebral defects, with a lessened number of cortical cells and pyramidal fibers than a physiologically developed child should possess as a basis on which to commence its extra-uterine growth. These are unfinished children, mainly because their progenitors were deficient in vital force. The most common birth accident is prolonged labor. Cerebral palsies from this cause are more frequent in the younger children of a family and from a young wife whose aged husband can impart only the dregs of manhood to his offspring.

In such children the life current is impoverished, the vascular system has less resistive powers, and hemorrhage into the meninges is coincident with, or follows soon after birth. The pathology is not particularly characteristic. It is the clinical sign and its course which make this an independent disease. Pushing the parietal bones against each other is said to cause a compression of the longitudinal sinus, by which the entrance of blood into the veins is made difficult and arterial congestion favored. Forceps delivery is blamed, but it would seem, unjustly, for it appears to be not so much the use of the instruments that is responsible as the factors which render their use necessary. The injuries by accident at birth are to the vessels of the meninges causing lesions over the motor zone of the cortex. Of the postnatal etiological factors, scarlet fever with nephritis, measles and pneumonia with endocarditis and embolism and whooping-cough are common causes of vascular lesions preceding cerebral palsies. Although the motor zone is the initial point of the cerebral attack, the process is diffuse, involving intelligence and the special senses.

Symptoms.—An initial period of fever and convulsions extending over several days, or even weeks, is early followed by motor paresis or paralysis involving one-half of the body, and an upper or a lower extremity. In the infant and young child a lessened though not abolished motor power is apt to be overlooked by physician and nurse until the child has so far recovered from the acute attack as to make efforts at voluntary muscular movements. Even then, impaired motor function and awkward movements are attributed to a simple weakness common to the convalescent period following any acute febrile attack. If convulsions were a constant initial factor, cerebral palsies would not so frequently be mistaken for spinal palsies. Contrary to our belief of former years, more accurate clinical observation has shown that more than one half of the corticospinal neuron lesions are unattended by convulsions as an early symptom; wheras not a few of the neurospinal palsies are preceded or accompanied by them. Within a few weeks after development of the paralysis, improvement will be seen, first in the face, then in the leg, and last and least in the arm. Encouraged by this we too often venture a prognosis that the child will outgrow it all. Up to this stage of progress a period of two to six weeks had elapsed and the points for differential diagnosis from the spinal palsy are just developing. If three or four days are sometimes necessary to differentiate the exanthematous diseases, or a continuous fever, a period corresponding to as many weeks is frequently necessary for deciding between a cerebral and a spinal palsy of childhood. Early after the paralysis is established spasticity of the muscles and exaggerated tendon reflexes develop. To the careless observer, spasticity of the muscles may be looked upon as a tremor due to weakness; this condition of spastic movement in the muscles diverts us from detection of an increased tendon reflex. Some but not decided muscular wasting and contractions are to be seen in the affected limbs, developing later into permanent contractions. Choreic and athetoid movements are a common occurrence. In the spinal type, paralysis is followed by flaccidity of the muscles, diminished or lost tendon reflex, marked atrophy of the muscles and entire absence of purposeless muscular movements. In the cerebral type the mental condition is disturbed. It is usually backward in development, the degree of mental defect ranging all the way from feeble-mindedness to imbecility and even complete idiocy. The development of peculiar moral traits associated with low degree of intelligence distinguish these children among their associates. Approximately one in four have a fair degree of intelligence, but a larger number are slow in learning to talk. In a very small per cent. of cerebral palsies those in which the face and arms are not paralyzed or only slightly, where both legs are involved, the intelligence is not impaired. As the child grows older improvement in the use of the legs occurs, but spasms of the flexors and adductors cause the legs to cross each other in attempts at walking.

This form of cerebral palsies in childhood is sometimes known as Little's disease. In the cerebral palsies the muscle reaction to the electrical current is normal. In the spinal type degenerative reactions are present. Palsies which are congenital, not attended by difficult labor and where there have not been convulsions or other serious phenomena after birth, are most likely due to true porencephalus. Palsies occurring during the first thirty-six months following birth are commonly due to cerebral hemorrhage, embolism or thrombosis. Of these, hemorrhage takes first place, embolism second, with thrombosis as a factor not yet clearly established. A case of cerebral hemorrhage in a two

months old child, on whom I did a post-mortem about twelve years since, verified our clinical diagnosis of a truth not at that time generally accepted by the profession, namely, that cerebral hemorrhage does occur, and frequently too, in children. I had attended the mother when this child was born; she was an alcoholic and morphine narcomaniac. The confinement was normal, labor lasting about three hours. The babe was full term and apparently healthy. It was wholly a bottle-fed child. A brief febrile attack with digestive disturbance was followed two days later by local muscular twitching on right side of face and right arm. These spasms were variable in degree, but increasing in severity and extent until, twenty-four hours after, right hemiplegia was established, death ensuing one week subsequent to the initial febrile stage. The autopsy revealed a hemorrhage of the left middle cerebral artery. Heredity doubtless had a large part in giving that child degenerate arteries. "We are just as old as our arteries."

Course and Prognosis.—The cause is chronic in both types and cure is scarcely possible. In the cerebral type mental defect exists in more than 90 per cent. of the cases. Epilepsy develops in one-fourth to one-half of all, and athetosis or some purposeless movements are commonly present.

In the spinal form mental impairment does not follow, nor do convulsions return after the initial stage. Differentiation of a cerebral from a spinal palsy in children is not easy at the onset, but when weeks pass into months, the numerous points of distinction are too clear to admit of an error in diagnosis. When the diagnosis is clear, we should unhesitatingly advise the parents or guardians regarding the prognosis. It is not enough to say that the impaired motor power will never be fully restored; we should clearly indicate the mental defect so likely to appear in the cerebral type, before allowing a devoted parent to spend money for need of which other members of his family are suffering, in a futile attempt at educating a defective and degenerating brain to the degree of earning a living by his intellect. In a simple spinal palsy the possibilities for receiving mental training are on a par with other healthy children of even age, the spinal palsy *per se* is no barrier to intellectual culture.

MEDICAL PROGRESS.

SURGERY.

Use of the Segmented Ring in Gastric and Intestinal Anastomosis.—The use of the segmented ring in gastric and intestinal anastomosis, as described in 1902 by Francis B. Harrington, of Boston, received such favorable encouragement from the profession during the past two years that reports have been made of personal cases to date, together with the results of a series of experiments upon animals, showing the process of repair. The ring, as described by FRANCIS B. HARRINGTON (*Annals of Surgery*, November, 1904) is made of hard aluminum in four sections, the sections being joined together by a small bar of steel, which has a shoulder and screw-thread serving as a handle. The outer surfaces of the ring are grooved to hold the ends of the intestines, which are tied in place by catgut purse-string sutures. The segments fit together by means of sliding tongue and groove joints, so rounded that they will not cut or catch in the tissues. The ring is made in three sizes, the middle size being best adapted for general use. The smallest size is well adapted for children and for cholecystenterostomy. The objects of the ring are to mechanically assist in the rapid and safe anastomosis of the intestines and to make the contrivance collapsible into such small pieces that subsequent passage through the intestines would be devoid of all danger and pain.

End to End Anastomosis.—Clamps are applied in the usual manner a few inches from the field of operation, and a gather stitch of No. 2 plain catgut is placed on either side of the area to be resected FRANCIS B. HARRINGTON (*Annals of Surgery*, November, 1904). This stitch circles the intestine with bites deep enough into the muscular coat to insure its not slipping, and in order to save time later, the catgut is lightly tied with one-half of a surgeon's knot without drawing the purse-strings tight. The bowel is next cut away up to one-eighth of an inch from the gather stitches because a wide margin forms a wide inturn and a correspondingly thick scar. The weak point in mechanical aids is the difficulty in obtaining a secure joint at the mesenteric border, which danger is avoided with the ring, by putting in a mattress stitch at this spot. This stitch includes a portion of the mesentery on each side, but is not tied at once. The ring is now introduced and one gather stitch tied. The mattress stitch is next tied, followed by the tying of the second gather stitch. The cut bowels now lie smoothly end to end, and by use of the handle can be easily moved about in convenient positions for sewing. The main stay of the suture is a Cushing's continuous stitch which penetrates the bowel into muscularis mucosæ. This starts just to one side of the steel handle and passes around the intestine with frequent knots until it reaches the handle again from the other side. The handle is now unscrewed, leaving the ring held together by the purse-strings, and the suture continued over the hole just occupied by the handle. The cut edges of the mesentery are caught together by a few interrupted stitches. The gather stitch consists of two parallel arms crossing at one end; these arms are just wide enough apart to allow room for incision. The mattress stitch is omitted here, and a continuous stitch is employed to approximate the serous coats and form the anastomoses. The results obtained both practically and experimentally have been most encouraging.

Foreign Bodies in the Vermiform Appendix.—L. J. MITCHELL (*Med. Rec.*, December 10, 1904) gives a list of true foreign bodies found in the appendix during his service as Coroner's Physician, with 1,600 autopsies. One or more grape seeds were present in eight cases, one or more shot in three cases, and fragments of bone in two cases. Other objects were a portion of a shingle nail, a globule of solder, a piece of nutshell, a portion of the vertebral column of a small fish, and fragments, apparently, of ash or stone. None of the appendices containing these bodies showed any igns of inflammation either past or present.

Resection of the Epididymis for Tuberculosis.—From data at present available and also from 12 cases treated by himself, W. BOGOLJUBOFF (*Archiv f. klin. Chir.*, Vol. 74, No. 2) concludes that these are not yet numerous enough to compare the results of this operation with castration. Removal of the tuberculous epididymis is followed in a large percentage of cases by the cure of the process in the testis and recurrences in the testis are not common. Partial resections of the epididymis are attended apparently by a less favorable prognosis as regards the cure of the process in the testis or the epididymis, than the complete resection. Removal of the tuberculous focus in the testis together with resection of the epididymis, not uncommonly leads to a cure of the process in the testis itself. The testis, although deprived of its epididymis, can retain its gross normal relations for a long time. Involvement of the other testis does not apparently occur any oftener where the resection of the tuberculous epididymis is done, than in those cases where no operation has been done. Bilateral, as well as unilateral resection of the epididymis in certain cases may also exert a favorable influence on a tuberculous process in the prostate or seminal vesicles. A tuberculous process existing at the same time in the lungs, may also be affected in a similar manner. The ability to indulge in coitus is retained after either one of these operations. The author finally observed that the production of an anastomosis, by operation, when resection of the epididymis was done, did not unfavorably affect the prognosis of the latter.

High Position of the Scapule.—The various forms of high scapular posture are met with quite often, and familiarity with them may save both the physician and the patient many a trouble. A. A. VOROBYOFF (*Roussky Vrach*, No. 35, 1904) cites two cases, in one of which the deformity was of an hysterical origin but so stubborn that the patient, otherwise a perfectly healthy man, was freed from military service after three and a half months of close observation in a hospital. While under chloroform the deformity could be reduced until both shoulders appeared perfectly normal. But even during the process of waking up from narcosis the scapulæ and the shoulder-joint gradually slipped back into their former position. In the second case the deformity was due to a congenital torticollis in which an operation performed some years ago, placed the head in a normal posture but failed in any way to influence the position of the scapulæ. The shortening of the left sternocleidomastoid muscle, its influence on the function of the clavicle and the entire half of the shoulder-joint became clear from the history of the disease. Such cases are not rare, as it is a well-known fact that at a certain stage of torticollis the scapulæ, as well as the entire shoulder of the affected side, takes in a higher position, at times even touching the corresponding ear. The author draws the following conclusions: (1) High position of the scapulæ as an independent affection and may be either acquired or congenital. (2) The congenital variety, as described by Sprengel, depends principally on bony changes of the scapulæ or alterations in the muscles inserted into it. Kaush has demonstrated the importance of the lower portion of the trapezoid muscle in the etiology of this affection. (3) The acquired forms depend on rachitic changes in the bone of the scapula itself. The first case described by the author belongs to the acquired type in which the affection of the muscles was due to muscular dystrophy. (4) Cases of congenital or acquired high position of the scapulæ in which its position is to be ascribed to causes not to be detected in the bone itself or in the neighboring muscles, should be strictly distinguished from the variety of Sprengel and from similar affections.

Anesthetic Effects of Methyl Oxide, Ethyl Chloride and Somnoform.—It is self-evident that our present anesthetics are not, by any means, satisfactory and that we should, as soon as possible, reach some definite conclusion as to the value of these newer substitutes for chloroform and ether. F. W. HEWITT (*Lancet*, November 26, 1904) concludes, (1) as to methyl oxide that when it is largely diluted with air, the mixture, which is not unpleasant to intake, rarely produces satisfactory anesthesia. Mixtures sufficiently concentrated to give such anesthesia are too pungent to be pleasant. As compared to the anesthesia obtainable by ordinary methods, that produced by methyl oxide is of a light type, although it is not infrequently followed by nausea and other distressing symptoms. In other words, although a long administration may lead to a long anesthesia, unpleasant after-effects are apt to follow. Analgesia is often difficult to produce to a satisfactory degree. Danger, however, is almost unknown in the use of this drug. Ethyl chloride, under certain conditions may be a very useful anesthetic. It is a fairly good substitute for nitrous oxide, but it is unquestionably somewhat uncertain in its action, depending apparently upon the reaction of the patient to the drug, a factor which cannot be determined until after it has been administered. Its chief drawback lies in the frequency with which it produces bad after-effects, headache, nausea, vomiting and a miserable sensation of depression. These are apt to be very characteristic and almost typically significant of even a moderate dose of the chloride. A feeling of heat is not uncommon. Speech disturbances are less common than with nitrous oxide, although micturition seems a trifle more common under the chloride. It is distinctly inferior to nitrous oxide and oxygen for short operations, such as dental work, although its portability and simplicity of administration constitute important advantages. The continuous administration without deep breathing of percentage mixtures of ethyl chloride and air, does not produce the best type of anesthesia. By adding nitrous oxide to ethyl chloride a very deep form of anesthesia is induced with extraordinary rapidity, the method having the advantage of destroying consciousness more pleasantly than ethyl chloride alone. The so-called somnoform does not produce such good effects as pure ethyl chloride and is distinctly more dangerous.

Stricture of the Urethra.—The subject of urethral stricture is not, perhaps, one calculated to excite any great degree of originality, but it has certainly been illustrated by WATSON (*Boston Med. and Surg. Jour.*, December 8, 1904) with a wealth of experience. He points out very rationally that urethras cannot be measured according to a certain arbitrary worm, inasmuch as they are not naturally all of one caliber. Nor can the meatus be taken as a guide of the urethral caliber. The average caliber may be said to be 32 French, but there are considerable normal variations, more of them above this figure than below it. The average meatus measures 22. There seems to be a fairly constant relation between the circumference of the flaccid penis, and the caliber of its urethra. Otis found this to be so, that a penis with a circumference of three inches, has a urethra with a caliber of 30 French, and each quarter inch in the increase of the circumference, means a corresponding increase of 2 mm. in caliber. In treatment, he believes that webbing bougies, sterilized in a saturated solution of rock salt, should be used up to 18 or 20 French, and from then on metal sounds. The operation of internal and external urethrotomy is described as used by Dr. Gavin, and said to take "not more than two minutes." For the rest, the orthodox methods are described.

PHYSIOLOGY.

The Proteolytic and Rennetic Functions Belong to the Same Ferment.—The knowledge of the extreme and baffling complexity of the digestive ferments is still further complicated by the discovery that actions which have hitherto been attributed to distinct enzymes, really belong to one and the same ferment. This discovery was made by J. P. PAWLOW and S. W. PARASTSCHUK in a study of the reciprocal relations of the proteolytic and milk-coagulating forments (*Hoppe-Seyler's Zeitch.*, September 22, 1904). The actions of both of these ferments in the various digestive juices follow a parallel course. All those changes that influence the functions of the peptic glands, effect both proteolytic and rennetic processes to an equal degree. Age has the same effect. The gradual elevation of the temperature to 52° causes both ferments to gradually and equally diminish in power, which is entirely lost at 62°. The addition of intestinal juice to pancreatic juice activates both the proteolytic and rennetic functions of the latter to an equal degree. A similar parallel course is seen in the juices obtained from the pyloric portion of the stomach and from the region of the duodemum provided with Brunner's glands. The latent and active conditions of both functions are similarly affected in all the juices examined. Upon these grounds the authors attribute these actions to one ferment. A preparation of rennin which Mencki has examined and which he had found possessed the property of coagulating milk, but not the property of digesting fibrin even when acidulated and diluted ten times, was found by Pawlow to digest fibrin when diluted a hundred times with .2 per cent. hydrochloric acid. What is the significance of the coagulation of milk from the standpoint of digestion? If the presence of rennet in mammals be considered necessary for the digestion of milk in the intestine, its function in other animals and in plants in which rennin is present, would be a very incomprehensible one. What would be the use of rennin in animals and plants, when it never comes in contact with milk? The best answer to this question is that the coagulation of milk is a special and from the standpoint of the experimenter, an accidental expression of a general reaction. This conclusion, which is credited to A. Danilewsky, also regards the coagulation of milk as a complication of the proteid molecule, corresponding to a simplification of the latter by means of pepsin, etc. The curdling of milk is the simplest stage in the long series of syntheses of proteids.

The Use of Reducing Substances in the Study of the Distribution of Poisons and Their Effects in Cellular Activities.—Of eminent practical importance from the standpoint of pharmacology and physiology, are the results obtained by C. A. HERTER (*Hoppe-Seyler's Zeitsch.*, September 22, 1904) in studying the effects of various poisons on the reducing activities of the tissues. The method used has been little applied in these branches of science. It was devised by Ehrlich and consists of the injection of methylene blue into the veins of some animal; in a few minutes, either during the life or shortly after the death of the animal, the methylene blue in the various tissues, depending upon the reducing strength of the latter, is partly or wholly decolorized into its leuco-base. This reduction shows itself in a change in color of the tissue from blue to its natural shade. Some of the tissues remain quite blue. The conditions are very variable and depend upon a number of factors,—as size and species of animal, quantity of substance introduced, condition of the infusion and interval of time between the injection and the examination of the organs. The author studied the effects on the reducing powers of the tissues of various narcotic substances, carbon dioxide and adrenalin, as well as the action of cold. In a normal animal, killed five minutes after the injection of a certain quantity of methylene blue into a vein, the muscles showed little of the dye, the lungs are wholly unstained and the heart, particularly the right side, has a bluish tinge. The liver has its usual color or appears darker than normal, the bile is green and contains both reduced and unreduced dye, the pancreas is stained light blue, and becomes considerably darker in the air. The kidneys are stained quite dark and get darker in the air. The urine is stained a greenish blue. The brain is nearly entirely unstained, as are likewise the suprarenal capsules. With the injection of much larger quantities of methylene blue, the phenomena are quite different. The gray cortex of the brain when exposd to the air, acquires a deep blue color, and the islands of Langerhans are deeply stained, while the rest of the pancreas takes a pale stain. From the fresh organs may be recovered a small amount of the leuco-base, which by means of oxidizing agents, may be transformed into the dye. Only a small part of the coloring matter may be recovered in this way, the greater part remaining in the organs, particularly the liver and bile, as a colorless substance that may be extracted by means of water, but which cannot be changed into the dye by any oxidizing agent. However, hydrochloric acid will transform it into the easily oxidizable leuco-base. One has probably in this case to deal with a transformation product of leucomethylene blue, possibly an acetyl compound of the latter. The author studied the effect of various narcotics of the fatty acid series on the reducing capacity of the organism with reference to methylene blue. The inhalation of ether causes an absence of the dye in the bile and its accumulation in the liver, which fact suggests an inhibition of the biliary secretion; there also occurs a retention of dye in the blood and other organs, as the brain and suprarenal capsules. Chloroform and chloral have the same effects as ether. In poisoning by means of hydrocyanic acid, the brain takes up less methylene blue than the brain of the normal animal. This result, which is quite the opposite to that seen in ether narcosis, is attributed to the diminished affinity of the cerebral cells for methylene blue. This is analogous to the inhibition of the capacity of the brain to take up oxygen, which also occurs in poisoning by hydrocyanic acid. The inhalation of illuminating gas by animals causes the muscles which have been made blue by means of methylene blue, to resume their former color. This result shows that even the moderate and in no way fatal diminution of the oxygen-content of the blood, causes the various organs immediately to satisfy their need for oxygen by the reduction of methylene blue. This is analogous to the reduction of indophenol by the tissues in carbon monoxide poisoning. In order to ascertain the effect of changes in the circulation of the blood upon the reducing activities of the tissues the author injected adrenalin into rabbits which were at the same time receiving methylene blue. As a result the kidneys are nearly or quite unstained. This is ascribed to the effect of adrenalin on the renal vessels. The suprarenals on the other hand take up

more methylene blue than the control animal. This harmonizes with the experience that the suprarenals take up the stain readily if the kidneys are not secreting actively, and *vice versa*, if the kidneys are in active secretion.

PATHOLOGY AND BACTERIOLOGY.

Immunization of Cattle Against Tuberculosis.—That the tubercle bacillus of the turtle is harmless to warm-blooded animals, is the claim made by FRIEDMANN (*Deut. med. Woch.*, November 10, 1904), who reports on a series of experiments undertaken to investigate the possibility of using them as a means of immunizing cattle against the bacilli of Perlsucht. It was found that a single injection of the turtle bacilli produced a degree of immunization sufficient to protect an ox against a dose of Perlsucht bacilli fatal to an untreated animal, and that cattle suffering from Perlsucht are apparently cured by injections of turtle bacilli. The author claims that this method of immunization possesses advantages over others now in use, in that the bacilli employed are perfectly harmless, and that a single injection produces a well-marked degree of immunity. The serum of animals, such as guinea-pigs and cattle, immunized in this way, is strongly protective, and when injected into other animals guards them against otherwise fatal doses of virulent bacilli.

Bacterial Antagonism to Typhoid Bacillus.—A series of highly suggestive researches, which may be of some value in practical medicine, is the discovery by W. D. FROST (*Jour. Infect. Dis.*, November 5, 1904), that mixed cultures of bacteria obtained from the soil and water have a marked antagonism for the typhoid bacillus. This antagonism is displayed when the former are grown in broth and a collodion sac containing the typhoid bacilli is suspended therein. The mixed cultures not merely check the growth of the typhoid germs but kill them. The antagonistic bacteria are widely distributed in nature, and are present in various types of soil and water. The following are examples of these bacteria: *B. vulgatus, B. vulgaris, Ps. fluorescens, Ps. putrida.* Changes in environment, such as temperature, oxygen supply, reaction and amount of dextrose have little or no influence in the production of antagonistic substances. Whenever the environment is such that a good growth occurs, the antagonistic substances are apparently always produced. The energy with which they act depends on temperature. At 38° C. their action is pronounced. At the temperature 10-12° the typhoid germ may be grown in the by-products of the other organisms. The antagonistic substances are thermostable—they withstand a temperature of 120° C. for ten minutes. The cause of the antagonism is not due to an exhausted food supply, action of proteolytic enzymes, specific enzymes or the production of hydroxyl-ions simply.

The Action of Microbes on Foreign Toxins.—Closely related to the subject of bacterial antagonism is the subject of the influence which the growth of certain bacteria has upon the poisons produced by other germs. In this instance one may recall the supposed curative influence which the mixed toxins of the *Bacillus prodigiosus* and the *Bacillus erysipelatosus* have upon certain forms of sarcoma, and the antagonism between certain bacteria of the soil and the typhoid bacillus. Although a different phase of this subject, which is evidently pregnant with much that will be of value in medicine, the investigations of M. GARNIER and G. SABARÉANN (*Arch. de Méd. Exper. et d'Anat. Path.*, September, 1904), have a peculiar interest of their own. It was Metchnikoff who discovered that some microbes, such as the *Bacillus califorme*, reinforce the toxins produced in bouillon cultures of the tetanus bacillus, while the majority of bacteria, such as the *Bacillus mesentericus, Bacillus subtilis*, and the bacillus of symptomatic anthrax, weaken them. Behring found that the diphtheria toxins can be destroyed by certain microbes. The action of microbes on toxins is variable and depends for its effect upon a broth agent and the thing acted upon. The bacillus of Eberth destroys the toxins of diphtheria, but reinforces the tetanic toxins, at least within certain limits of time. The bacillus of symptomatic anthrax destroys the tetanus toxins but reinforces those of diphtheria. The destruction of the tetanic toxins by the bacillus of symptomatic anthrax is due to a distinct action of the micro-organism upon the toxins and not to any substance excreted by the former. As proof of this fact, it is shown that a filtered culture of the bacilli has no effect upon a mortal dose of the tetanus toxins. A mortal dose, however, is rendered completely benign if it is mixed with the bacilli of symptomatic anthrax and kept in contact with them for fourteen hours. Toxins of tetanus which have become aged, or which have been attenuated by simple contact with the air and light or under the influence of the bacillus of symptomatic anthrax, still preserve a certain toxicity in spite of the complete disappearance of the tetanogenic power. They will thus cause wasting and death in a few days in the animal experimented upon. This is a non-specific property of the tetanus toxins, and is comparable to that which Ehrlich attributes to the toxones produced by a transformation of the specific toxins. The secondary action replaces the primary one. It may also be compared to that which takes place in the organism when poisons lose their specific properties, but still give rise to pathological lesions. As an instance of the latter, the author cites the fact that in old cases of syphilis, parasyphilitic lesions appear which are entirely unlike the earlier manifestations of the disease.

Transudates and Exudates.—As the result of observations in a series of 75 cases, distributed among 12 different diseases, J. L. MILLER (*Am. Med.*, November 12, 1903) presents the following conclusions: He claims that the color of the fluid, its reaction and the size of the erythrocytes are of little diagnostic value. Nucleo-albumin is usually more abundant in exudates than in transudates, however, many exudates fail to show more than a faint trace. On account of the constancy of the salts present, the specific gravity and the amount of albumin bear an intimate relation. Fluids from different body cavities of the some individual, or fluids of the same origin in different individuals, or successive tappings of the same cavity, may show marked variation in the amount of albumin, probably explained by the permeability of the capillaries, the degree of irritation of the serous surface, the condition of the patient's blood, the tension of the fluid, the amount of absorption taking place, and possibly the blood pressure. Methods of estimating the bulk of albumin, such as Esbach's and Purdy's, are not applicable to serous fluids. Reuss' formula is the most accurate, simple method for determining the amount of albumin in serous fluids. The diagnostic value of the specific gravity, or amount of albumin, is greatly lessened by the frequent presence, simultaneously, of several processes. A hydremia, as a result of anemia or transudation from pressure, may lower the specific gravity of an inflammatory fluid. Secondary inflammation, high tension of the fluid, or resorption taking place, may increase the specific gravity of

a transudate. At present there is absolutely no reliable method of determining the tuberculous character of serous fluid. The specific gravity of a fluid, when taken for several tappings, may be of prognostic value. The predominence of lymphocytes may be associated with a long standing, simple pleuritis, a hydrothorax or a tuberculous pleuritis. The presence of relatively large numbers of neutrophiles in pleuritic fluids, may be associated with an acute, simple, or a secondary tuberculous pleurisy. The presence of numerous cells, chiefly neutrophiles, suggests an acute simple pleuritis. The presence of numerous lymphocytes with few if any neutrophiles, indicates that the process is probably a tuberculous on. In ascitic fluids there is little that is characteristic. Neutrophiles are usually more abundant in fluids due to portal stasis from cirrhosis than in tuberculous peritonitis. An eosinophilia in one body cavity may occur along with a neutrophilia in another. A study of the cellular elements in fluids from the pleural or abdominal cavities, is of comparatively little diagnostic value, either in differentiating transudates from exudates, or in determining the character of the latter.

The Blood in Measles.—A careful study of the leucocytic changes of the blood in measles has been made by W. TILISTON (*Jour. Infect. Dis.*, November 5, 1904), with the following results: During incubation the leucocytosis begins soon after infection, reaches maximum six days before appearance of eruption and lasts into the first part of the period of invasion. During the latter part of the invasion and during the stage of eruption, the white count is normal or is more usually diminished, reaching its lowest point at the height of the rash. Leucocytoses points to complications, but its absence during the eruptive stage does not exclude complications. The onset of leucocytosis with the latter may be preceded by a rise in the percentage of neutrophiles or a failure on their part to decrease at the proper time. The polymorphonuclear leucocytes are increased during the incubation, invasion and eruption and diminished at defervescence. They are normal during convalescence. Myelocytes are present in small numbers during the eruption, especially in young children. The lymphocytes are at first decreased, and increased after the crisis. The large mononuclears and transition cells are normal at first and increase later. The eosins are decreased or absent in eruptive stage and later increase. The mast cells show no changes. The blood plates are decreased during the eruption. The blood is normal at the twelfth day. In doubtful cases the absence of leucocytosis with a decrease of eosins is in favor of measles as against scarlatina and *vice versa*.

Infective Myositis.—On account of the great circulatory distribution of this rather rare disorder, it is of importance because of its extraordinary virulence. JOHN H. ABRAM (*Lancet*, November 12, 1904) states that out of 17 cases of infectious myositis, referred to by Lorenz, seven were known to have died in from four to sixteen days, while in one of the author's two cases, death occurred on the sixth day. In addition to the well-known classification in Lorenz's monograph on muscle diseases, the author adds the following rather unusual form, to wit: Dermatomyositis. This is not unlike trichinosis, save that the etiology is unknown. After rather vague prodromal symptoms, characterized by marked dermal inflammation, the disorder spreads into the subjacent muscular tissue. There is marked enlargement of the spleen and death is apt to be due to involvement of the respiratory functions. Polymyositis, hemorrhagia very similar to the foregoing, but the heart is particularly involved. Neuromyositis. This affection is very closely related to multiple neuritis. Myositis with joint lesions, acute rheumatism and gonorrhea, myositis tuberculosa,—either hematogenous or due to extension. Myositis-syphilitica,—either a diffuse inflammation with skin implication or gumma. Myositis-fibrosa. May occur as a definite disease, probably due to congenital tendencies, but is more commonly a secondary condition. Myositis-ossificans. (*a*) Local variety practically always traumatic in origin; (*b*) myositis-ossificans progressiva. Affecting children and young adults, associated with inflammatory phenomena and due probably to congenital predisposition. In the suppurative varieties of myositis, it has been shown positively that micro-organisms play a large part in the causation of the disease. In the non-suppurative varieties, however, although the etiology is probably a similar one, nevertheless the relation of the germs has not yet been definitely decided. Bruns' list of muscles in infective myositis is: Pectoralis major, deltoid, triceps and biceps, psoas, quadriceps and gastrocnemius. An important differential point between this disease and ordinary muscular rheumatism is that it is usually accompanied by a moderate degree of temperature. Furthermore, on inspection, the muscles or muscle involved may usually be seen to be shortened and swollen, and on palpation, in many cases nodules may be found in the hardened muscular tissue. If the skin is edematous the detection of these nodules may be very difficult or impossible. Pain, as in other inflammatory conditions, is a marked feature and is very much increased on motion. Furthermore as in other syphilitic conditions, this not infrequently is a marked factor in the syphilitic variety where it occurs only at night. Miyake, in 1904, says that the disease is rather common in Japan, 33 cases having come under his observation in twenty-one months. The disease is clinically met with in three forms: The first being a malignant variety which usually kills within a very few days, the second being an acute form in which recovery is probable, and the third, being a mild subacute form from which recovery is altogether probable.

Experimental Changes in the White Cells.—In a previous article J. ARNETH (*Münch. med. Woch.*, November 8, 1904) stated that in almost all infections, the earlier forms of polynuclear leucocytes, that is, those with single or indented nucleus, predominate, while cells with two and three-lobed nuclei are less numerous. In rabbits, the eosinophile cells take the place of the polynuclears, and if the animals be experimentally infected with various germs or toxins, the same nuclear changes may be observed as in man. Where an animal possessed a natural immunity for some specific toxin, as the rabbit for tuberculin, the changes did not occur, even though the leucocytes of man were affected by the same toxin. The nuclein, which is set free when a polymorphonuclear leucocyte breaks down, is probably of the highest importance for combating infection and it is most probably for this reason that the cells ripen more quickly and constantly receive reinforcements from the bone-marrow. If foreign proteid and other poisons were injected instead of bacteria, the same changes were observed. The red cells also suffer severely if a toxin circulates in the system for normoblasts and even megaloblasts were encountered constantly.

Congenital Hypertrophy of the Heart.—An enormous enlargement of the heart was detected at the autopsy of a child, fourteen months old, by E. HEDINGER (*Virchow's Archiv*, Vol. 178, No. 2). Since the valves and all other organs were free from pathological lesion,

the author was forced to assume that the condition was congenital. The child was perfectly well and developed satisfactorily up to the end of the first year. After that, cough appeared, a pronounced anemia of chloratic type developed, and with the first attempts at walking, the heart became insufficient. An explanation of this condition is very difficult. In other similar cases, the heart was supposed to be the seat of a diffuse myoma, but it is more likely that here some circulatory obstruction existed during intra-uterine life, even though most careful search at autopsy was negative.

First Anatomical Changes in Tuberculosis of the Lungs.—It is difficult to determine what pathological lesions initiate a tuberculosis of the lungs, since the changes are already far advanced in most cases which come to autopsy. Thus A. J. ABRIKOSSOFF (*Virchow's Archiv*, Vol. 178, No. 2) found only two cases suitable for study in several hundred autopsies. He concludes as follows: Pulmonary phthisis in adults is generally due to a recent infection with tubercle bacilli and not a result of an exacerbation of a latent process acquired during infancy, as is held by so many. In most cases the lungs themselves are the starting-point of the process; in other words, pulmonary tuberculosis is a primary and independent lesion. The disease begins as a rule in the intralobular bronchi of the apex of one lung, in the form of a productive, tuberculous peribronchitis. Owing to loss of elacticity, as a result of caseation of the primary neoplastic tissue, a circumscribed dilatation of the bronchial lumen will follow. The process spreads from its primary sites in different ways. It travels both in centripetal and centrifugal direction along the bronchus and its branches, giving rise to a tuberculous, peribronchial lymphangitis. The neoplastic tissue surrounding the bronchus, may readily break through the bronchial lumen, both at the primarily and secondarily infected sites and the symptoms of a specific tuberculous bronchitis will soon appear. Cheesy bronchitis and peribronchitis of the intralobular bronchus and its immediate branches, are thus the first stage of the tuberculous lesion. The process may also extend to the abjacent tissue, when it generally retains its productive character and presses together the alveoli of the lung. As soon as cheesy masses have ruptured into the bronchus, an aspiration occurs into peripherally situated areas, and several patches of bronchopneumonia will appear, each one of which corresponds to the terminal end of a bronchus. This may be called the second act of the process. Most recent cases examined were in this bronchopneumonia stage with beginning central caseation as far advanced that an idea of the original structure could only be obtained by staining for elastic fibers. The blood-vessels are not rarely affected by a productive process which surrounds them like a belt and goes hand in hand with a proliferation of the intinia. Vessels of larger caliber are, however, free. The elastic fibers are destroyed late and then in a purely mechanical way. The bronchopneumonia distribution of the initial foci may also be seen in hematogenous miliary tuberculosis and in the experimental tuberculosis of animals; it argues, however, strongly in favor of a primary infection of the lungs in most cases. There can be no doubt that bacilli are often inhaled and the fact that they settle so frequently in the apices is best explained by diminished powers of overcoming an infection here. In children the bronchial nodes are generally affected, first, from the respiratory passages and the lungs are involved secondarily. Bronchial tuberculosis of children has a tendency to remain latent for a long period and encapsulation is never perfect, but with adult age the dangers of propagation become less, owing to calcification and proliferation of connective tissue. At this stage, the bacilli are no longer transported to the glands, but to the lung itself. Secondary involvement of the lungs in children is due to rupture of cheesy material through the walls of the bronchus nearest the node or else by extension of the process into the perivascular lymph-channels of the bronchus. The secondary foci within the lungs do not develop in a typical way, like the primary, unless they spread by way of the bronchi.

PRESCRIPTION HINTS.

Delirium Tremens.—In mild attacks the following combination of hypnotics has proven of invaluable service:

℞ Heroin .....gr. ss (.003)
Veronal .....3 iss (6.0)
Elix Sod. Bromid.....q.s.ʒ ii (60.0)

3 ss q. 3 hours during day; 3 ii at night.

And as a stomach tonic in the morning,

℞ Ac. nitro. mur., dil.....3 i (4.0)
Tr. cinchon. comp.....q. s. ʒ ii (60.0)

3 ii before breakfast.

Moist Eczema.—Such weeping surfaces may be lightly dusted over with oxide of zinc powder, or the following may be applied:

℞ Calamine .....3 i (4.0)
Ung. oxidi zinci.....3 vii (28.0)

Sig. Apply to spot.

Or the calamine may be applied in a lotion, as follows:

℞ Pulv. calaminæ.....3 ii (8.0)
Pulv. oxidi zinci.....3 ii (8.0)
Alcoholin .....ʒ ss (15.0)
Aq. rosæ.....O i (500.0)

Misce. Apply with cotton.

Flatulency.—The following has been useful in flatulency and gastric fermentation:

℞ Aquæ chloroformi.....f3 viii (240.00)

Sig. Tablespoonful before and after meals.

Used in chronic gastric catarrh:

℞ Acidi salicylici.....gr. xxiv (1.60)
Oleoresinæ capsici.....gtt. vi (.40)
Strychninæ sulphatis.....gr. ss (.032)
Ext. gentianæ.....gr. xxiv (1.60)

Misce. Fiant pilulæ No. xxiv.

Sig. One after meals.

Hemorrhoids.—Used to relieve painful internal piles with prolapse:

℞ Chloretoni .....gr. xxx (2.00)
Orthoformi .....gr. xxxvii (2.50)
Unguenti belladonnæ.....gr. xxx (2.00)
Iodoformi .....gr. xxx (2.00)
Adipis lanæ hydrosi..q.s. ad 3 vi (25.00)

Misce et fiat unguentum.

Sig. Apply several times a day.

Mammary Inflammation.—Very useful in acute inflammation with tenseness and of pain. Active saline purge at beginning of treatment.

℞ Unguenti belladonnæ.....ʒ i (32.00)
Unguenti hydrargyri.....3 iv (16.00)
Ichthyoli.....f3 iv (15.00)
Cerati plumbi subacetatis.....ʒ i (32.00)

Misce.

Sig. Apply to breast freely, and employ tight breast-binder.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, DECEMBER 31, 1904.

A NEW CAPSULAR STAIN.

AMONG the tasks facing the commission of experts who have undertaken to investigate the cause of the increase of acute respiratory diseases, is that of tracing the conditions of the transmission of the *Diplococcus lanceolatus* from one human being to another. The theory that pneumonia is more or less preventable, rests upon the hypothesis of communicability, and a prerequisite to the demonstration of the mode of communication is the possession of a ready means of differentiating the offending organisms. Biological methods of differentiation have not proven very satisfactory, and the need has been felt of a practical method of morphological identification.

The contribution by Dr. Leo Buerger of a new method for the staining of the capsules of bacteria, promises to be of material assistance in the work above referred to, and is a happy offset to the action of the Civil Service Commission, which, by its ruling prohibiting the employment of non-resident research scholars, threatened materially to impede the progress of the proposed investigation.

By the methods of staining heretofore employed, the encapsulated diplococcus has not been easily and surely distinguished from certain organisms of the streptococcus type. The older stains present the capsule of the diplococcus in the form of a diffusely stained elliptical area immediately surrounding the diplococcus. Dr. Buerger's stain (MEDICAL NEWS, Dec. 10, 1904, page 1117 brings out the capsule in an entirely different manner, presenting a narrow elliptical membrane, deeply stained, which is separated from the diplococcus by a clear interval of capsular substance, which latter area either remains unstained or takes on a faint color.

The type of capsule belonging to the *Diplococcus lanceolatus* is shown by this stain to be entirely different from that characterizing other encapsulated organisms. The method employed appears to depend upon the rapid fixation of the bacteria while still alive and when spread in a medium which prevents dissolution of their capsules.

Dr. Buerger's technical procedure is one of timely interest, and if his method proves as successful in the hands of other workers as in his own, it will undoubtedly be regarded as a distinct improvement upon the methods of staining hitherto in vogue.

MODERN ADVANCES IN ANIMAL ENZYMOLOGY.

SOME of the most notable recent advances in the domain of physiological chemistry have reference to the question of enzymology, a chapter which, in animal chemistry at least, was only a few years ago regarded as fairly satisfactorily closed. We had all become acquainted with the ptyalin of the saliva, the pepsin and chymosin of the gastric juice, the trypsin, steapsin and amylopsin of the pancreatic juice, besides the existence of certain indefinite ferments in the enteric juice, the function and origin of which was, however, not very clear. As regards the process of albuminous digestion it was further thought that peptic digestion led to a definite end-product, the amphopeptone of Kühne, in which a hemi- and an anticomplex were still united, while tryptic digestion led to the separation of these groups and the liberation of antipeptone and hemipeptone; the latter, unless directly absorbed, was then supposedly decomposed with the formation of leucin and tyrosin.

In a general way this concept of the process of proteolytic digestion still holds good, but it has been modified and extended in many important particulars. As we have pointed out editorially

some months ago, it has thus been ascertained that Kühne's amphopeptone, as well as his hemipeptone and antipeptone do not represent end-products of proteolytic digestion in the original sense of the term, but that both amphopeptone and antipeptone are mixtures of still simpler products, which in part still give the biuret reaction, while in part they retain none of the original characteristics of the albumins. The existence of a hemipeptone, on the other hand, has thus far only a hypothetical basis. The difference between the process of peptic and tryptic digestion is essentially a quantitative one, in which the element of time plays an important rôle. The end-products are the same and are identical with those which result on hydrolysis of the corresponding albumins by means of acids and alkalies.

The part which pepsin plays during the process of albuminous digestion, has not been materially changed by any of the discoveries of recent years, excepting in so far as the extent of its action is concerned. But in the case of trypsin it has been found that the presence of a special body is necessary before the ferment is capable of exercising its activity. Formerly it was thought that the pancreatic proteolytic ferment existed in the pancreatic cells as an inactive proferment, trypsinogen, which in some manner not definitely understood was transformed into the physiologically active trypsin. It has now been shown that this transformation is effected by a peculiar substance, which has been termed enterokinase, and which apparently belongs to a special class of cellular products, which in themselves are inactive, but are capable of activating certain ferments. Of the mode of action and the chemical nature of enterokinase, we know practically nothing and its origin even has not as yet been definitely ascertained. From the researches of Delezenne, however, it appears that leucocytes (lymphocytes) may be primarily concerned in its production.

Whether or not a kinase is necessary to activate the other digestive ferments of the pancreas also, viz., their proferments, has not been definitely ascertained, but in the case of the fat-splitting ferments at least it seems not improbable.

The secretion of the pancreatic juice was formerly explained upon the basis of a reflex action, in which the acid chyme coming from the stomach represented the stimulus. This conception also has been modified as the result of recent research, for while there is good evidence to show that pancreatic secretion can be reflexly excited, an additional mechanism undoubtedly exists by which the same result can be accomplished. This mechanism depends upon the presence in the circulation of a peculiar body which at first was regarded as a ferment, but which apparently belongs to a special group of products, which have been termed krinins or krinogenic substances, and of which the exponent in the present case is known as secretin. This apparently exists in the epithelial cells of the duodenum and the upper portion of the jejunum and possibly even more widely distributed in the gastro-intestinal canal, in the form of an inactive prosecretin, which is transformed into the active product by contact with dilute acids, etc. It is then absorbed and carried by the blood current to the pancreas, where it exercises its special stimulating activity directly. Of the chemical nature of this substance also we know practically nothing. It is not destroyed by boiling either in acid, alkaline or neutral solution, and can therefore not be an ordinary ferment; is in no way specific of any one animal species, but it appears to be common to and identical in all vertebrates. Whether or not the pancreas is the only digestive gland which is thus stimulated to secretion remains to be seen, but there is some evidence to show that a similar effect can be produced upon the secretion of the bile and the activity of the salivary glands.

To return to our older concept again, it was formerly supposed that the products of gastric and tryptic digestion were reconstructed to native albumins in the gastro-intestinal mucosa, which idea was largely based upon the fact that that "peptones" disappear from their solutions in the presence of particles of intestinal mucous membrane. This observation was placed in a new light by the discovery of Cohnheim that the intestinal mucous membrane contains a proteolytic ferment erepsin, which is capable of hydrolyzing acid albumins and albumoses to the point where the biuret reaction disappears, while it is without effect upon the native albumins. In the experiment mentioned, the "peptones" thus disappear, not because they are reconstructed into albumins by the epithelial cells, but because they are broken down still further. Where and how the reconstruction of the albuminous molecule then takes place after its preliminary cleavage into its ultimate fragments is not known. That it takes place after the epithelial barrier of the gastro-intestinal mucosa has been passed has repeatedly been suggested, but the negative find-

ings in the portal circulation, so far as albumoses and "peptones" are concerned, was regarded as evidence that the process of reconstruction could not occur beyond the intestinal tract. In the light of our present knowledge, however, it is quite conceivable that this may occur nevertheless, but thus far blood analysis for the ultimate products of digestive cleavage has been beset with great difficulties, which, however, are likely before long to fall away. What future studies in this direction will bring is of course impossible to foretell, but it is interesting to note that by the aid of a special method, but recently perfected, encouraging results have already been obtained. So much appears certain in any event that the reconstruction of the albumins takes place through the activity of the body tissues. The question of how of course cannot be definitely answered at the present time; but in view of the rapid progress which is being made in the knowledge of the so-called tissue ferments, and the disclosure of the multitudinous possibilities which here exist, it appears not unlikely that ferment action may also be responsible for albuminous reconstruction. This seems the more likely, as it has been shown that several ferments are capable of reversible action, *i.e.*, both of destruction and of construction.

To enter into a consideration of the intracellular ferments in any detail, however, is out of the question at this place. But it is noteworthy that only seven years ago one of the foremost writers on physiological chemistry in Germany emphatically denied the existence of such ferments. This is the more remarkable as Salkowski had drawn attention to the process of autodigestion of organs some years before, and had insisted that during this process ferments are active which are derived from the tissues themselves. Nevertheless it was maintained that this process, in so far as it could be referable to ferment action at all, was dependent upon what might be termed miscarried gastro-intestinal ferments. The various manifestations of cell life, *i.e.*, the various constructive and destructive changes occurring in the tissues were explained upon the basis of special vital forces, as something distinctive and separate from merely chemical or physical forces. Since that time, however, it has been conclusively demonstrated that not only the phenomena of autolysis, as we see them post mortem in the laboratory, but also many of the catabolic changes occurring during life are referable to fermentation. The ordinary digestive ferments of former days are now very much in the minority, while the tissue ferments are steadily increasing in number. The complexity of ferment action, as we now know it to occur in a single cell, is indeed quite bewildering. In the liver cell, for example, not less than a dozen different ferments have been demonstrated. That the action of some of these is not only destructive, but also constructive, can scarcely be doubted, but as yet our knowledge of ferment action in general is too incomplete to warrant the conclusion that the reversible action which has been demonstrated in some is common to all. Future research in this direction will probably go far to clear up many obscure cellular phenomena, which formerly were attributed to special vital forces.

ECHOES AND NEWS.

NEW YORK.

Appointments at the N. Y. Skin and Cancer Hospital.— Drs. J. Riddle Goffe and Andrew F. Currier have been appointed gynecologists to the above-named hospital, located at Nineteenth Street and Second Avenue. This is the only service in this country exclusively devoted to malignant disease in its preventive, curative and palliative treatment. An open clinic will be held every Tuesday and Friday, from 2 to 4 P.M., when patients will be received. It is especially desired that physicians should recommend and, if possible, accompany their patients.

A Milk Company to Quit.—The milk and cream company whose permit for the sale of its products in New York was recently revoked by the Health Department on account of its insanitary condition, will go out of business, and is now disposing of its stores and property to milk companies which either hold licenses or will apply for them. Dr. Darlington said he thought this was the best move the company could make, as he did not see how he could ever grant them a permit. He said that formaldehyde and coloring matter had been found at the creamery for the adulteration of the milk, and under such circumstances he did not see how the company could guarantee that it would not repeat the practice.

Vanderbilt Ward Open.—Kathleen Vanderbilt, the one-year-old daughter of Mr. and Mrs. Reginald C. Vanderbilt, played the part of Santa Claus, by proxy, to the little sufferers in the Lincoln Hospital, One Hundred and Forty-first Street and the Southern Boulevard, on Christmas morning, when a new ward for children was opened in her name and each one of the inmates got presents from a huge Christmas tree. Recently Mr. Vanderbilt became interested in the institution through the attending surgeon, Dr. Benjamin P. Tilton, and, learning that there was no ward set aside especially for the care of children, decided to establish one. His offer was gratefully accepted, and the Board of Trustees' old room, which is about 50 by 50 was remodeled, at a cost of about $7,000. Twenty beds were put in it.

Columbia Pharmacy Degrees.—The Columbia University Council, at its last meeting, authorized the degree of Graduate in Pharmacy to be conferred, as in the past, by the New York College of Pharmacy at a separate commencement, and provided for the establish-

ment of a course of higher grade leading to the degree of Pharmaceutical Chemist. Candidates for the degree of Pharmaceutical Chemist will be required to pursue a course of study extending over two full academic years. After 1907, the advanced degree of Doctor of Pharmacy, which is now conferred by the College of Pharmacy upon those who hold the degree of Graduate in Pharmacy and who take an advanced course in addition, will be conferred only upon graduates of the advanced course who already hold the degree of Pharmaceutical Chemist.

PHILADELPHIA.

Pathological Society Exhibition.—The annual exhibition meeting of the Pathological Society of Philadelphia will be held on January 11 and 12, 1905, in the Mütter Museum of the College of Physicians. The extension of time will allow of short demonstrations on series of specimens.

Symposium on Food Preservatives.—At the meeting of the Philadelphia County Medical Society, held December 28, Dr. H. W. Wiley, Chief of the Bureau of Chemistry of the United States Department of Agriculture, by invitation gave an address on "Food Preservatives and Food Adulteration." W. W. Smithers, Esq., by invitation, spoke on "Defects in Pennsylvania Food Legislation." Dr. T. L. Coley read a paper on "The Evaluation of Evidence as to the Pharmacologic Action of Food Preservatives."

Street Cars Still Unheated.—The annual talk regarding the Rapid Traction Company because of unheated cars is in progress, and is more pronounced than ever before; the result will probably be the same. Last week there were 76 deaths from pneumonia and many prominent physicians are on record in attributing a proportion of them to the cold cars. Owing to the persistent agitation of the daily papers, mounted policemen have been placed in the most crowded parts of the city to keep the cars moving, but this makes but few minutes difference in time and of course contributes little to the question at issue; it helps traffic which is the only intention.

Merging of Prominent Chemical Firms.—The first of January will mark the merging of two great chemical and drug houses of this city. At that time the manufacturing firms of Powers & Weightman and Rosengarten & Sons, will be united under one supervision. The combination was at the initiative of Mrs. Walker, the daughter and heir of William Weightman. She will be represented in the directorate of the new firm but will take no active part in the management. Business will be conducted as usual at both plants, where nearly one thousand hands are employed. The preparation of morphine and quinine will be almost entirely in the control of the new firm, each of the old ones having a monopoly of one of those drugs.

Effect of Tuberculosis Vaccination Upon Tuberculous Cattle.—At the meeting of the Pathological Society of Philadelphia, held December 22, Drs. Leonard Pearson and S. H. Gilliland, in a paper on this subject, announced experiments which may have an important bearing on the treatment of the disease in question. The experiments began four years ago when from a herd of tuberculous cattle, twelve tuberculous calves were isolated. Of these, six were given injections of tuberculin and human tubercle bacilli and the other six were kept as controls. Some of the calves died and the others were finally killed. Comparison of the lesions showed such difference in favor of the vaccinated animals as to leave essentially no doubt of the beneficial effect of the measures adopted.

Tablet to Dr. Hughes Unveiled.—The bronze mural tablet erected in the Philadelphia Hospital, through subscriptions started by the *Press*, was unveiled on December 27. It is three by six feet in size and is placed in the wall of the main entrance corridor, where it will commemorate Dr. Daniel E. Hughes, who for twelve years was chief resident physician of the institution. He died two years ago from tuberculous peritonitis contracted in the buildings. The tablet bears a life-size bust of Dr. Hughes and the following inscription: "In memory of the self-sacrificing services of Daniel E. Hughes, M.D., Chief Resident Physician of the Philadelphia Hospital from 1890 to 1902. Erected by subscriptions received by the Philadelphia *Press*, from his friends and admirers. Others he helped and saved: himself he spared not. 'A sick man helped by thee shall make thee strong. Thou shalt be served thyself by every sense of service which thou renderest.'"

Improved Health Laws for the State.—At the coming session of the Pennsylvania Legislature will be introduced a bill providing for the reorganization of the public health service of the State. The principal purpose is to prevent the occurrence of epidemics such as happened recently at Butler. The act provides that the State Board shall appoint for each county a practising physician of at least five year's experience to be medical officer of the county; such physicians must have special knowledge of sanitary law and administration. The county courts will name a health officer in each township to serve under the county physician. All these officers will have full power to investigate any thing suspected of being a nuisance, even to pollution of streams, will have authority to make arrests, and may summon witnesses. The idea is to have the state constantly patrolled by a staff of physicians to detect things in any way inimical to the health of the people. The bill has been endorsed by the State Board of Health and by practically all of the medical societies of the State.

CHICAGO.

Smallpox.—Chief Medical Inspector, Dr. Heman Spalding, reports 16 new cases of smallpox sent to the isolation hospital during the week; 15 never had been vaccinated; one had an old, imperfect scar; four were unvaccinated children under the school age. One was an unvaccinated school child in school on a false certificate of vaccination. Four came from the down-town lodging houses. Since January 1, 1904, there have been 323 cases of the disease, of which number 22 died, 251 recovered, and 50 remained in the hospital under treatment.

Children's Hospital Staff.—At a recent meeting of the Board of Directors of the new Children's Memorial Hospital, the following physicians were chosen for the medical staff: Drs. Fernand Henrotin, M. L. Harris, Norman Kerr, J. N. Oswald, Henry G. Anthony, J. W. Class, Hugh T. Patrick, A. M. Hall, Geo. F. Fiske, W. S. Christopher, W. D. Storer, W. W. Quinlan, S. J. Walker, J. P. Houston, and Geo. Chapman. Drs. Frank Billings and Nicholas Senn will act as consulting physicians. A committee of the Board, consisting of Thomas D. Jones, Dr. Samuel J. Walker, E. W. Cramer, W. B. McIlvaine, and James F. Porter has a site for the new building under consideration. Several good pieces of property have been offered, and a selection will soon be made.

Physicians Meet and Plan New County Hospital Staff.—The Commision to nominate members of the County Hospital medical staff met yesterday afternoon, and adopted the report made by its special committee.

It was recommended that a new form of application be printed, so that any physician desiring may apply. It is to be published not later than December 30. Excerpts of the report adopted, with revisions, are: That nervous and mental diseases be established as a separate department of service; that the apportionment of the eclectic and homeopathic members of the staffs in the departments be left to the decision of the representatives of those schools of medicine, and, if they cannot agree, the nominating commission to decide; that all applicants must be citizens of the United States and residents of Cook County for at least five years, and in practice or study for at least five years after graduation; that the following regular departments of service be created, with number of attendants for each as indicated: Surgery, 12; medicine, 12; nervous and mental diseases, 4; diseases of children, 6; obstetrics, 4; skin diseases, 2; diseases of the eye, 2, and diseases of the ear, nose and throat, 2. Seven committees, composed of physicians, were appointed to pass on the applications, one for each department.

Home for Destitute Crippled Children.—The management of this home is making renewed efforts to provide for the necessities of crippled children. Mrs. R. H. McElwee has given the movement a new impetus by donating a dispensary and operating room, but there still remains to be provided, according to present plans, quarters for sixty more unfortunates. The Home accommodates 40, and the plan is for an annex to cost $10,000. In the past year 500 crippled and destitute children have been cared for in the home.

Public Health Conditions.—No material change in public health conditions is indicated by the mortality returns for the week. The death rate continues unusually low for the season. The average December rate between 1893 and 1903 was 15.19 per thousand of population; thus far during the present month (December) the rate has been 13.35, and that for the week is only 13.77, as compared with 15.28 for the corresponding week of last year. The number of deaths from suicide and other forms of violence are the lowest for any week of the year—only a total of 20, as compared with 50 during the previous week, and 51 in the corresponding week a year ago. There is a decrease from the 2,063 hospital patients of the week before to 1,862, although there is a slight increase of pneumonia and typhoid fever cases.

City Lax in Tuberculosis.—"The municipality saves money and spends lives." This is the charge made against the city of Chicago by Samuel Hopkins Adams, who writes on tuberculosis in *McClure's Magazine* for January, 1905. Mr. Adams visited most of the large cities of the country in quest of data concerning the cause, spread and prevention of the great white plague. His investigation in Chicago, he says, demonstrated that the city law-makers have been utterly lax in framing ordinances providing for compulsory registration, whereby the houses occupied by consumptives are reported to the City Hall, and for municipal disinfection and sanitation. "For the type of all that is most inefficient and negligent, we must come back to Chicago," writes Mr. Adams. "Chicago, which in the pride of its civic virtues, stands as the most public-spirited of our great cities! As I have said, there is no compulsory registration law for tuberculosis in Chicago, consequently the authorities know nothing of the foci of infection, excepting in the cases of death, when they get their more or less reliable reports from the physicians, and their usually trustworthy information from the organized undertakers. On such information they send out to the physician a card of inquiry asking whether he considers disinfection of the premises desirable. By replying to this the doctor generally wastes his time—for that's the end of it.

GENERAL.

Women in Medicine.—At the University of Michigan there are at present forty-three women pursuing the study of medicine and surgery, while in the department of law there are only four female students.

Officers of the Southern Surgical and Gynecological Association.—At the last meeting of this Association the following officers were elected for the ensuing year: President, Dr. Lewis C. Bosher, Richmond, Va.; First Vice-President, Dr. John D. S. Davis, Birmingham, Ala.; Second Vice-President, Dr. I. S. Stone, Washington, D. C.; Secretary, Dr. W. D. Haggard, Nashville, Tenn., reelected; Treasurer, Dr. Charles M. Rosser, Dallas, Texas, reelected. Louisville, Kentucky, was selected as the place for holding the next annual meeting, in December, 1905.

No Yellow Fever Epidemic.—Señor Quesada, the Cuban Minister, in view of reports that yellow fever was again obtaining a foothold in Cuba, and that the Cuban Government was not vigorously enforcing sanitary precautions, this week gave out a statement which is in part as follows: "There has been no epidemic of quarantinable diseases. Yellow fever, smallpox, cholera, and the plague have not developed in Cuba since the proclamation of the republic. Neither of the two cases of yellow fever at Punta de Sol in October and November has propagated beyond the original case."

Doctor's Bill, $126,000.—Dr. L. C. H. E. Ziegler, in the Probate Court of Chicago, recently filed a bill of particulars as to claims made by him against the estate of Mrs. Harriet G. McVicker, who died recently in California. Mrs. McVicker was the widow of the theatrical manager, J. H. McVicker. Dr. Ziegler's claim in full amounts to $126,000, the bill including copies of contracts which Ziegler says existed between himself and Mrs. McVicker. The first contract provides that after the death of Mrs. McVicker the sum of $100,000 shall be paid to Dr. Ziegler as soon as possible. This money, according to the contract, was to be given for services as medical adviser.

Levy Tax for Consumptives.—For the maintenance and cure at Denver, Col., of Hebrew consumptives from all parts of the United States a per capita tax is being levied on the members of leading Hebrew benevolent, social and labor organizations. Jacob Marinoff, of the Board of Trustees of the Jewish Consumptives' Relief Society, who has been sent to New York from the headquarters of the national organization at Denver to collect funds for the establishment of a large, permanent sanitarium, said that he is arranging a series of entertainments, concerts and balls to increase the sanitarium fund. The largest of the balls will be held at the Grand Central Palace, on March 9.

Medical Delegates Sail.—Twenty-two physicians left Baltimore on December 27, on board the steamship Athos of the Di Giorgio Steamship Line, bound for Panama. They are delegates from the American Medical Association to the Fourth Pan-American Medical Congress. The party from Baltimore expects to reach Colon on January 3, where they will board a special train for Panama, which Government has appropriated $25,000 for the entertainment of the visitors. The party will be taken back to Colon, and from Colon will sail on January 7 for Havana, where they will be the guests of the American Public Health Association, which meets in Havana on January 9, 1905. The U. S. Public Health and Marine Hospital Service will be

represented at the Pan-American Congress by Surgeons H. R. Carter and J. C. Perry and by Assistant Surgeon C. C. Pierce.

New Charter of the Red Cross.—A new charter of the American National Red Cross has been passed by both houses of Congress, and now needs only the approval of the President to make it operative. This charter, which puts that organization practically under the control of the Government, was drawn by two former Secretaries of State—Mr. Richard Olney and Mr. John W. Foster. Under it the governing body of the general society is to consist of a central committee of eighteen members. Six of these are to be chosen by the incorporators of the parent organization. When six or more State and territorial societies are formed, these will be entitled to elect six members of the central committee, but at present twelve of the eighteen are to be appointed by the President of the United States. When the State organizations are completed, the President will have the appointment of six central committeemen, one of whom he is to designate as chairman. It is provided that the President must select among his committeemen one from each of the Departments of State, War, Navy, Treasury and Justice. From this central committee is to be chosen an executive committee of seven members. In order that the accounts of the organization may be kept straight it is provided that its annual reports must be audited by the War Department, and thence transmitted to congress. By the operation of this provision it is intended to prevent in future such scandals as have grown out of the transactions of the society in the past. The American National Red Cross Society, which the American National Red Cross is to succeed, was organized in 1881, and Miss Clara Barton, the moving spirit in its formation, was for twenty years its chief manager. Its energies were not restricted to war, but some of its most effective work was done in furnishing relief to those suffering from great calamities like the Michigan fire of 1881, the Florida yellow fever epidemic of 1888, the Johnstown flood of 1889, the Russian famine of 1891-92, the South Carolina tidal wave of 1893, the Armenian massacres of 1896, the Galveston tidal wave of 1900, and the Mont Pelée eruption of 1902. During the Spanish-American War the society fitted out ships for the benefit of the soldiers and sailors, but Miss Barton's management of its affairs was the subject of criticism, which, however, was directed at her methods of administration rather than her intentions. The new charter is designed to bring the Red Cross Society into effective cooperation with the Federal Government and its military and civil systems.

OBITUARY.

Dr. G. S. WEST, died at Palestine, Texas, his home, December 27, of heart failure. He was eighty-one years old, and a well-known Confederate veteran, having been a surgeon of the Sixteenth Alabama Infantry, later a brigadier surgeon and afterward in charge of the hospitals at Atlanta.

Dr. HENRY C. MCLEAN, a Brooklyn, N. Y., physician, died last Friday night at his home, 146 Sixth Avenue. He was born in Newburg, N. Y., in 1860, and was graduated from Manhattan College and from the Medical School of the New York University. He started his professional career in Brooklyn and built up a large practice there. He was visiting physician at St. Mary's and Kings County Hospitals, and physician to the Brooklyn Baseball Club. Dr. McLean became a member of the Brooklyn Board of Education in 1886, and served in that body for ten years.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, December 10.

THE TREATMENT OF HABITUAL DRUNKARDS—THE MEDICAL SERVICE OF THE ARMY—MILITARY SURGEONS AND THE MILITARY CLUBS.

THE report of Dr. Branthwaite, Government Inspector under the Inebriates Acts, has recently been issued. It deals with three classes of institutions provided for the treatment of habitual drunkards, namely, certified inebriate reformatories; State reformatories, and "retreats." In regard to the first of these classes the following table gives a bird's-eye view of their growth in number and population:

Year.	No. of reformatories.	No. of Beds available.	No. of cases admitted.	Under detention at end of year.	Discharged or otherwise absent.	Total committals at end of year.
1899.	3	227	88	87	1	88
1900.	5	416	144	182	30	232
1901.	6	478	204	288	148	436
1902.	8	624	278	419	295	714
1903.	9	677	298	579	433	1012

From this table it will be seen that at the close of last year there were nine such reformatories in existence. Speaking of them as a whole, Dr. Branthwaite says: "The experience of another year has confirmed many of the opinions formed during the earlier stages of the work, and has resulted in definite advance in many directions." He complains of the difficulties created by the different views taken by judicial authorities of the proper way of dealing with inebriates. Some magistrates object to give what they call a three years' punishment "just for drunkenness." Dr. Branthwaite shows how foolish this objection is, both from the point of view of the inebriate and of the community. He points out that the majority of persons sent to reformatories would, if let alone, spend most of their time in prison. The real object of detention in the case of habitual drunkards is not punishment but reformation. "The community is not," says the Inspector, "in any way protected as long as inebriates, who are a danger to the public or a constant disgrace, are permitted to get drunk every month or so and wreak their vengeance on things in general. The knowledge that no improvement can result from giving longer prison sentences made up of many short periods is definite, and it is certain that intermittent penal treatment, when resorted to, needs to be continued until death or lunacy relieves us of further trouble." In support of this contention Dr. Branthwaite cites what he calls a "sample case." A woman, aged fifty-five years, was committed for two years to a reformatory in June, 1902. The mere enumeration of her previous convictions occupies nine foolscap pages of the report. The first conviction recorded against her occurred in July, 1868. During the interval between that date and June, 1902, she was before the magistrates 315 times. On 284 occasions the charge was "disorderly conduct" or "drunk and disorderly conduct." The "disorderly conduct" was probably in every instance due to the influence of liquor, the charge being stated thus to avoid the necessity of proving drunkenness. As for State reformatories, they, from causes related to public policy, have gradually become places for the care and detention of violent and weak-minded persons, who require for their care and control methods closely analogous to those associated with the detention of the most violent crim-

inals and lunatics. Nevertheless the influence of the State institution is, in Dr. Branthwaite's opinion, one of inestimable value as an agency of reform, for it exists to enable other institutions to do their work in a proper manner, unhampered by the refractory element. "Retreats" are not showing the rapid progress which is evident in the work of reformatories. Their number has not increased during the past year, nor has there been any increase in the number of patients who have been admitted to the existing "retreats." The chief reason of this is doubtless to be found in the fact that entrance to a "retreat" must be the free act of the drinker. Naturally few are willing to surrender their liberty in this way. Since the appearance of the report, Dr. Branthwaite has given evidence as to the law relating to the detention and control of inebriates before a royal commission appointed to consider the question of the care of the feeble-minded. He expressed the opinion that the legal definition of an inebriate should be extended to include persons who bring themselves to the condition of inebriates by the use of other drugs. He further pointed out that under the Habitual Drunkards' Act, 1879, there is no obligation on any authority to provide inebriates' homes, and no power to compel inebriates to enter them. Anyone who can obtain a license from the local authority can open a "retreat" for inebriates, but there are several institutions which are not licensed. Some of these are well conducted, but others are insanitary, overcrowded, badly situated, and have no proper facilities for the employment of the inmates. There are now twenty retreats, in which about 500 persons annually are submitted to detention. That number, according to Branthwaite, is ridiculously small. There are now twelve reformatories, two of which are State institutions. In the "retreats" the average of recoveries is about 30 per cent. In the reformatories, out of a thousand cases, 34 were certified as insane.

In connection with the treatment of habitual drunkards it may be mentioned that the Municipal Council of Glasgow has under consideration a somewhat Draconian method of dealing with such offenders. The proposal is that they should be banished to a lonely island on the west coast of Scotland, there to work out their own salvation removed from the influence of gin-shops. With regard to this proposal Sir Robert Anderson, one of our leading authorities on crime, says that any plan which separates inebriates from opportunities of indulgence is obviously, in the interest alike, of the drunkard and of the community. To some, however, it appears that the transportation of inebriates would be fraught with the danger of horrors such as those which led to the abolition of that form of penalty in the case of criminals.

The Medical Service of the Army is at this moment without an official head. The term of office of the late Director-General, Sir William Taylor, expired on December 1, and there has been a veritable tug-of-war between the military authorities and the Advisory Board which is partly composed of civilian doctors, as to the choice of a successor. The former wish to have a representative of the old order of things; the latter insist on having a man of progressive ideas. The Secretary of State for War, Mr. Arnold-Forster, must have a bad time between the contending parties. He came into office a few months ago with a preconceived policy, the essential feature of which was to undo the work of reform that had been done by his predecessor, Mr. Brodrick. The question whether Mr. Brodrick was or was not a heaven-born War Minister, as his friends declared him to be, need not be discussed here. But there is no doubt whatever that as far as the improvement of the medical service of the Army is concerned, his work was, as far as it went, almost wholly good. Mr. Arnold-Forster's attitude toward the doctors was at first distinctly hostile. The experience gained during his short period of office seems, however, to have taught him that in regard to the medical department, at any rate, it would be a fatal mistake to go back to the old order of things. But the Adjutant-General who, in accordance with the latest scheme of reform, controls the medical service, and who is a staunch upholder of what in Germany is called Junkerism in military administration, has threatened to resign unless he has his way in the appointment of a Director-General of the traditional type. To speak plainly he wants an officer grown grey in the service who may be trusted not to trouble the repose of the War Office by a consuming zeal for the efficiency of his department. The Advisory Board on the other hand are eager to break a tradition which they hold to be largely accountable for the discredit into which the service had fallen at the time of the South African War. They have used all the influence they could bring to bear on the Government to have Deputy Director-General Keogh appointed head of the medical service. Such an appointment would be almost revolutionary, for Keogh is a comparatively young man who was promoted to his present post over the heads of a large number of senior officers. His only disqualification, however, even in the eyes of the military faction, is his youth. It is probable that he will be appointed, as it is understood that Sir Frederick Treves has used all his great influence with the King in his favor, and the Sovereign has—on personal, not on constitutional grounds—a good deal to say in army appointments, if he cares to intervene.

Some years ago it was difficult for a medical officer of the Army to secure election at one or two of the "Service" clubs. At that time a majority of the army doctors were men of rather indifferent breeding from the Scottish and Irish schools, and it must be admitted that many of them were from the social point of view "undesirables." Members of the clubs accordingly conspired together to exclude medical officers, and as a very small proportion of blackballs is sufficient to "pill" a candidate, they generally succeeded. The improved conditions of the service have for a few years past attracted a better class of men in the professional as well as the social sense, and the ill-feeling against the medical branch that used to exist among combatant officers has to a large extent died out. That it still persists in certain quarters, however, is shown by the fact that the other day no fewer than seventeen doctors were rejected in a body at the Junion United Service Club. The incident has excited a good deal of indignation among the members of the club, and it has been ascertained that a clique of retired "fossils" are at the bottom of the affair. The committee of the club has called a general meeting for a day next week when the names of the rejected officers will be submitted for election without the secrecy of the ballot. If the clique persists in its opposition to doctors, the medical members, who number about one hundred and fifty, will organize themselves into a clique which will systematically blackball every candidate proposed for election, to whatever branch of the Army or Navy he may belong.

THE EXPERIMENTS OF L. LIEBERMANN.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—In an editorial published in your issue of December 24, you refer to the recent labors of L. Liebermann in the following terms: "The experiments

of L. Liebermann on colloidal platinum also opens a vast field of possibility in the domain of pathology. This observer states that the mechanism of the oxidative reaction helps to explain certain phenomena connected with the destruction of foreign and toxic bodies in the organism. Certain pathogenic bacteria are rendered innocuous by uniting with protective bodies normally present in the organism, the complements of Ehrlich. But these act so slowly that they cannot fortify the organism against an intoxication. On this account another body is necessary, the amboceptor (immune body), which will unfold the activity of the complement. The analogy to the phenomena of the oxidative reaction is as follows: The pathogenic agent corresponds to the tissue, the complement to the active oxygen, and the amboceptor to the oxidase. The amboceptor is thus nothing more than a catalyzer."

I wish to call your attention to the fact that Liebermann's conclusions only confirm those submitted by myself two years ago, in the first volume of my work on the "Internal Secretions, etc." The most casual perusal of this volume will show that the 800 pages it contains serve mainly to emphasize the overwhelming importance in physiology, *pathology* and therapeutics, of the oxidizing substance, the so-called "oxidases" of the blood. Not only is their rôle in each organ, including the nervous system, defined, but their identity (the secretion of the adrenals, which, by taking up oxygen in the lungs, becomes my "adren*oxin*") is also given. The complement of Ehrlich is assimilated therein, owing to its physicochemical attributes, to a trypsin-like body in the blood-stream. This body, in order to become effectively bactericidal or antitoxic, is stated by me to require the aid of adrenoxin —also said, owing to its properties, to correspond with Ehrlich's amboceptor or immune body. I likewise specify that adrenoxin only produces its effects indirectly, *i.e.*, by catalysis, its rôle being to combine with a third body, fibrinogen, in order to enhance through the effects of an exothermic reaction, the proteolytic activity of trypsin, which activity as is well known, steadily increases under the influence of heat, up to a given limit.

Very truly yours,

CHARLES E. DE M. SAJOUS.

Philadelphia, December 26, 1904.

SOCIETY PROCEEDINGS.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventeenth Annual Meeting, held at Birmingham, Alabama, December 13, 14 and 15, 1904.

The Association met in the Council Chamber of the City Hall, and, in the absence of the President, Dr. Floyd W. McRae, of Atlanta, Ga,. the Second Vice-President, Dr. J. Shelton Horsley, of Richmond, Va., presided.

Addresses of Welcome were delivered by Mayor Drennan and Dr. L. G. Woodson, which were responded to by Dr. W. P. Nicolson, of Atlanta, Ga.

After a brief report from Dr. John D. S. Davis, Chairman of the Local Committee of Arrangements, relative to entertainments, order of procedure, etc., the reading of papers was proceeded with.

Method of Uniting Intestines of Very Small or of Unequal Caliber.—Dr. J. Shelton Horsley, of Richmond, Va., said that there were many modifications of sutures, but all of them might be divided into two general classes, the continuous and the interrupted. Taking it for granted that each suture penetrated all coats of the intestines, he demonstrated experimentally that the continuous suture more nearly fulfilled the ideal conditions for intestinal healing than the interrupted suture. Serous surfaces united after being sutured on account of the hyperemia of repair, and this was dependent upon some slight injury to the peritoneum. In the case of an interrupted suture, union was obtained within the bite of the suture by hyperemia caused by pressure of the suture, by the trauma of the needle, and by the presence of the thread. Between the sutures the pressure from thin intestinal tissues was practically *nil*, so union depended solely upon extension of this hyperemia, and if this process did not extend from one stitch to another, leakage would surely occur. If continuous and moderate pressure was made on two serous surfaces, sufficient injury would be done those surfaces to cause adhesions. This continuous pressure along the entire margin of an intestinal wound could be obtained only by the continuous suture, and not by the interrupted. He described nine experiments in which an area of intestine was included between two lines of sutures. In only four of these did the whole area between the rows of sutures unite, demonstrating that something besides mere approximation of serous surfaces was necessary for satisfactory union. The method of suture was difficult to describe without accompanying illustrations. The intestinal ends to be united were placed side by side with their convex borders in contact and clamped with a hemostatic forceps. Then he used a suture that passed through the whole of the intestinal wall, sewing together with a continuous stitch a crescentic area excised; then changing the stitch to a Cushing right-angled continuous suture penetrating all the coats and invaginating the remaining margins of the wound. When the first knot was reached in the suture, it was invaginated and the suture continued by two or more insertions of the needle; with the last two insertions of the needle, as secure a hold as possible was obtained without penetrating the mucosa. The very last insertion of the needle was in the reverse direction of the other insertions so that when the knot was tied it was partly buried. The bowel was then returned to its natural position, and the mesentery sewed up with continuous stitches. A number of photographs and specimens from dogs were exhibited, demonstrating some of the advantages claimed for this method. These specimens had been filled with paraffin and then photographed; afterwards the intestine was removed, and the paraffin model was also photographed, giving a very good idea of the large lumen at the site of the union.

Dr. W. P. Carr, of Washington, D. C., stated that the holding of the bowel with a clamp, a rubber ligature, tape, or something of that sort, to prevent the escape of intestinal contents during operation was the only part of intestinal suture that seemed not to be as perfect as it might be. There was more or less danger of injuring the bowel by any sort of clamp or ligature which was put around it tight enough to prevent the intestinal contents from escaping. The Murphy button or any form of clamp might possibly do that at times, particularly if the bowel was already more or less inflamed at the time of the operation. He thought it was better to hold the bowel with the fingers of an assistant when this was possible, although it facilitated the operation very much to take the bowel in a long clamp not far from the point where it was going to be sutured, as it prevented the sliding of the coats of the bowel over each other.

Dr. Herman J. Boldt, of New York, personally preferred suturing to using buttons or mechanical devices for the purpose of intestinal anastomosis.

Lateral Anastomosis.—Dr. J. M. T. Finney, of Baltimore, Md., said that in his experience he found that there were certain technical difficulties to the end-to-end suture which were hard to overcome. For instance, at the mesenteric border it was difficult to obtain satisfactory union; there was so much likelihood that a leak would occur there, that it had been his practice for the last two years to use almost exclusively lateral anastomosis, closing both ends. This gave more satisfactory union. He was an advocate of the interrupted suture.

Continuous Suture.—Dr. A. Palmer Dudley, of New York, stated that in his experience the use of the continuous as against the interrupted suture had been followed by fairly good results in intestinal work.

Dr. W. S. Goldsmith, of Atlanta, stated that in placing continuous sutures around the bowel, where there was likely to be distention, leakage might result, and a fistula be produced by tissue necrosis incident to the distention of the bowel on account of the application of this ligature. It was a ligature in effect around the bowel; we had distention of the gut, and the ligature did not expand; there was no elasticity about it. Therefore, the interrupted suture would be his preference, although not so rapid, minimizing the pressure owing to distention or dilatation of the gut.

Dr. Samuel J. Mixter, of Boston, said that where one was in a hurry the continuous suture was quicker. He emphasized the absolute necessity of everybody practising these operations on lower animals before beginning to do them on patients. This was a point that was not sufficiently recognized. Every new method should be tried on some of the lower animals. So far as his experience went, very little clamping was necessary even if there was some leakage. He did not consider that there was any great danger from septic peritonitis following, because the peritoneum was able to stand a great deal of soiling without great damage, and it could be washed off without producing any ill-effect. This was likewise true of operations on the stomach.

Intestinal Obstruction.—Dr. Dyer F. Talley, of Birmingham, Ala., said that the subject of intestinal obstruction was one which could not be too frequently presented to the profession, and one with which it could never become too familiar. It was a condition which presented many difficulties in its early diagnosis, and it was a well-recognized fact that in acute cases the life of the patient depended on early recognition and prompt surgical intervention. There were two difficulties in the way of early operation: (1) It was hard to make a positive diagnosis in the first twenty-four hours; indeed, in some cases it was impossible to do so unless an exploratory laparotomy was made. (2) There was a tendency on the part of the patient, his friends, and also the physician, to wait until tomorrow and see what purgatives and enemata would accomplish. The author reported eight cases of intestinal obstruction that had come under his care during the last fifteen months. The details of each case were recounted with singular clearness. One case showed that a laparotomy could be done without anesthesia, and many cases that were seen late and were too weak for an anesthetic might be operated on and relieved without a general anesthetic. The results of operations in the eight cases were five recoveries and three deaths.

Dr. Guy Leroy Hunner, of Baltimore, stated that from a large experience with hospital and private patients showing symptoms of intestinal obstruction, he had come to the conclusion that he would rather err on the side of operating occasionally unnecessarily than to commit the error of not interfering and be too late. Cases were cited in point.

Dr. W. P. Carr said the more he saw of cases of intestinal obstruction, the more he was convinced that whenever there was a strong suspicion of it an exploratory operation should be made. There were so many cases that had little or no symptoms for quite a while, and others that had considerable fecal movements from the lower bowel after obstruction had taken place, that one was apt to be misled. He had been misled a number of times. He narrated some interesting cases.

Early Operation.—Dr. J. Garland Sherrill, of Louisville, Ky., advocated early operation in these cases. Whenever a patient had intra-abdominal pain which was not promptly relieved, an exploration should be made. Whenever a patient had a severe pain in the abdomen that ceased suddenly, it is likely to be the result of gangrene of the gut, and for that reason such a case should demand very prompt operation. Many of these patients could be saved by opening the abdomen at once, even in the presence of shock, and in that way avoid inflammation of the peritoneum.

Dr. Chas. L. Bonifield, of Cincinnati O., recommended changing to ether when patients could not stand chloroform, particularly in children.

Laparotomy in Intussusception.—Dr. W. O. Roberts, of Louisville, Ky., narrated the case of a child, nine months old, on which he had operated. The little patient had been treated for dysentery. When he saw the patient there was a considerable amount of distention, great straining, and bloody mucus passed by the bowel. He introduced his finger into the rectum, and found an intussusception. The intussusception was within two inches of the anus. He advised laparotomy, which was consented to and performed, and found the intussusception began at the ileocecal opening, and went clear to within two inches of the anus. It was relieved very easily; but the child died in the course of twelve hours from shock. It was very important in all cases of intestinal obstruction to examine the rectum carefully.

Early Diagnosis.—Dr. Wm. E. Parker, of Hot Springs Ark., said the general practitioner ought to be impressed with the importance of early diagnosis in these cases, and if there was any question at all to call in a general surgeon, or someone who had had experience in this class of cases. He knew of no class of work in which an early diagnosis was as important, and then after this of getting into and out of the belly as quickly as was consistent with good work.

Dr. W. P. Nicolson, of Atlanta, Ga., called attention to the significance of abdominal pain. One should always bear in mind that the location of pain in the abdomen bore practically no relation to the location of the lesion itself in many instances. When a patient, with a severe abdominal pain, was not relieved by two or three doses of morphine, and did not remain relieved by this agent, but needed a repetition of it, the case was not one of indigestion. It was far more serious. He had the misfortune to operate on a young woman for intestinal obstruction, and during the operation there was tremendous fecal vomiting, which was aspirated into the lungs—some of it. She left the table in good condition, with good pulse, and with indications that she was all right; but within a short time she became cyanosed, with rapid breathing, pulse increased in rapidity, and remained conscious, but died within two hours.

Gangrene Following Intussusception.—Dr. Samuel J. Mixter said that given a patient who had had intestinal obstruction for days, and was in a very critical condition, he thought many of them could be saved if too much was not attempted, and the reason so many of these patients died was because surgeons attempted too much. Take a case of gangrene following intussusception, if a simple opening was made in the most distended

loop of bowel, a tube tied in and the intestine drained, a later operation could be done, and the patient probably saved, whereas if one attempted to do a resection or a serious operation at the time, the patient would surely die.

Morphine Masks Symptoms.—Dr. A. Palmer Dudley said that the surgeon was at a great disadvantage when he was called in to see a patient to whom morphine had been administered for the relief of pain, for the reason that it masked the symptoms. Peristalsis was arrested and the obstruction went on more rapidly. He had not given a dose of morphine in fifteen years to any patient on whom he had performed an abdominal section.

Dr. Talley, in closing, said the principal point he wanted to emphasize was the importance of early operation, because he believed that most of the patients could be saved if reached and operated upon early enough.

Review of One Thousand Operations for Gall-Stone Disease, with Especial Reference to the Mortality.—This was the title of a joint paper by Drs. William J. and Charles H. Mayo, of Rochester, Minn. The paper was read by Dr. Chas. H. Mayo, In one thousand operations for gall-stone disease there were 50 deaths—five per cent.—counting as a death every patient operated upon who died in the hospital without regard to cause of death or length of time thereafter; 960 for benign disease, with 4.2 per cent. mortality. More than one procedure through a single incision, only the major was counted, therefore 101 cholecystostomies, and 44 cholecystectomies in connection with common duct operations were not included. Of 673 cases operated upon by cholecystostomy there was a mortality of 2.4 per cent. This group included most of the acute infections. In no case did the stones reform in the gall-bladder. This was the operation of choice in the average uncomplicated case, and especially if there was or had been cholangitis. Of cholecystectomy, there were 186 operations, with a mortality of 4.3 per cent. This operation was employed for special indications, such as cystic duct obstruction, thick-walled gall-bladders suspicious of malignant disease, and cholecystitis without calculi. There were 137 operations for stone in the common duct, with a mortality of 11 per cent., 7 per cent. from the operation, and 4 per cent from secondary complications after more than three weeks. Of the cases operated upon during the quiescent period, with little jaundice and slight infection, all recovered. There were four cases with extreme icterus from obstruction, who had subcutaneous hemorrhages at the time of operation (purpura). All of these died; four cases of complete biliary obstruction in which the common and hepatic ducts were filled with clear cystic fluid and no bile, all died. Including malignant disease, 14.6 per cent. of the total were of the common duct; 40 cases of malignant disease, with 22.5 per cent. mortality; two cases with cancer of the gall-bladder now alive and well more than two years after operation; two additional favorable cases of more recent date. Of the remaining malignant cases, a few received marked palliation, but the majority were but little benefited.

Enterostomy.—Dr. J. W. Long, of Greensboro, N. C., stated that the important measures to be accomplished were, (1) the drainage of gas and feces from the intestine. (2) In mechanical obstruction, relief of distention, pain, vomiting, and toxemia. (3) In septic conditions depletion of the inflamed bowel and peritoneum, overcoming intestinal paralysis and sepsis. (4) Protection of the peritoneum as in typhoid perforation. (5) Nourishment of the patient by making an artificial mouth. Enterostomy was employed only in the most desperate cases and in those where it was indicated the patient is always in imminent peril of speedy dissolution from some of the conditions above indicated. In all forms of intestinal obstruction the patient suffered from distention and absorption of the toxins. When septic peritonitis was present, the sepsis itself produced suspenion of peristalsis, which was sufficient to account for the obstruction. In mechanical obstruction, to this factor was added painful peristalsis. In recent years enterostomy had been applied to a number of conditions other than intestinal obstruction *per se*, the principal indication being feeding the patient through the fecal fistula. This operation had been applied to cases of inoperable carcinoma of the stomach, a fistula being made in the jejunum and the patient fed through it; life prolonged, and the patient made more comfortable. Enterostomy was also to be applied to typhoid perforation, catching up the perforated bowel and fastening it to the wound, it being more quickly done than closure of the perforation; at the same time, the bowel was drained and the patient fed through the fistula. Dr. Long reported eight cases of enterostomy occurring in his practice in twenty-two years, with five recoveries or 62½ per cent. He drew the following conclusions: "(1) Enterostomy is a life-saving measure and never an operation of choice. (2) Enterostomy is not indicated where a more ideal surgical procedure is feasible. (3) In the hands of an experienced, carefully trained, competent surgeon, capable of dealing with grave emergencies, enterostomy need rarely be resorted to, but the better the surgeon, the more quickly he will adopt any measure which will rescue his patient. (4) Every abdominal surgeon must, according to the abundance of his material, find cases in which only enterostomy can with propriety be done. (5) When an enterostomy is indicated, to hesitate is to lose the patient; to operate promptly, dextrously, and with celerity means to tide the patient over the imminent peril and spare him for future consideration."

Drain the Intestine.—Dr. James A. Goggans, of Alexander City, Ala., said that drainage of the distended intestines was very important. He made it a rule, if possible, when he did a laparotomy for any trouble whatever, to drain the intestine in order to let it regain its elasticity and move the fecal current along as it should. He commended the author of the paper for advocating enterostomy and draining where the intestine was greatly distended in the class of cases under consideration.

Dr. J. Garland Sherrill said that enterostomy had a place in surgery in those cases where complete surgery could not be done; but whenever a surgeon sent a patient away from the operating table with an open intestine, he subjected the profession and himself to criticism from the laymen who did not understand the condition. Therefore, he would lay it down as a rule that no enterostomy should be done in any case where it was possible to do complete surgery, and instead of widening the field for enterostomy surgeons should strive to contract it.

Dr. I. S. Stone, of Washington, D. C., said the essayist must have gotten hold of a number of very difficult and delayed cases for operation. He thought the idea of the essayist was simply this,

that rather than let a patient die from obstruction, he would catch up a loop of bowel and make an artificial anus. This was the old-fashioned way of doing enterostomy, and the essayist got as good a mortality as most surgeons would have gotten under the same circumstances. Dr. Long, in closing, said it would seem that he had unfortunately ran afoul of quite a number of cases in which it seemed proper to do enterostomy. These eight cases were spread over a period of more than twenty-two years of practice. He doubted if any surgeon had a better percentage of recoveries in cases of acute intestinal obstruction by any method than that which he had reported, namely, 62½ per cent.

Abuse of Purgatives Before and After Abdominal Section.—Dr. I. S. Stone, of Washington, D. C., read a paper with this title in which he said that purgatives should be given as evacuants, and should not produce hypercatharsis, whether administered before or after abdominal section. Bland evacuants, such as castor oil, aided by suitable enemata, would empty the bowels without causing severe exhaustion. The writer agreed with Ochsner's method. The excessive purgation, hypercatharsis, commonly employed, was intended not only to empty the bowels, but to perform additional service, namely, to remove collections of serum or other fluids which might be in the peritoneal cavity. A large majority of the sections made at the present time might be called minor pelvic or abdominal. In these no infection existed, nor was the intestine in any way involved. Such cases required only the mildest evacuants, with sterile diet in the preliminary treatment. He deplored the extreme and unnecessary purgation to which these patients were frequently subjected. If the minor abdominal cases were not in need of hypercatharsis, one might next consider how consistent was this rigorous catharsis in very ill patients. Vomiting, paresis, ileus, and excessive distention after operation were frequently exaggerated and aggravated by the administration of the worse than useless cathartics which were usually given. No remedy had been discovered for vomiting due to anesthesia, and this fact should interdict the annoyance given patients by using purgatives before normal peristalsis had been restored. The only remedy of value for vomiting was the regulation of stomach contents, both as to character and quality of substances ingested. The stomach tube was therefore an instrument of great value, if one had need to reach and treat this viscus, with a view of obtaining rest and relief of distressing emesis. It had been shown that patients had bowel movements (peristaltic) after surgical operations, because they were ready to act rather than because one had found any method to produce such results. Hypercatharsis did more than anything short of venesection, or the use of dangerous heart depressents, to unfit patients for prolonged anesthesia and operation. The prompt administration of purgatives after operation appeared to cause vomiting and reversed peristalsis, and to add to the general discomfort of the patient. The temporary paralysis of the intestines in nearly every case was to be desired, and nearly all patients having been properly prepared would recover far more satisfactorily with perfect rest until normal peristalsis returned, than with the aid of all sorts and kinds of irritants intended to produce quick movements of the bowel. If the intestines were not actually scoured by catharsis and had only been fairly well emptied of excess of gas and fecal matter, they would respond to treatment after operation with far greater ease than when made absolutely empty.

(To be Continued.)

BRITISH MEDICAL ASSOCIATION.

Seventy-second Annual Meeting, held at Oxford, England, July 26, 27, 28 and 29, 1904,

SECTION ON LARYNGOLOGY AND OTOLOGY.

(Continued from Page 1200.)

The Treatment of Non-Suppurative Disease of the Middle Ear.—Dr. Urban Pritchard, of King's College Hospital, said the treatment of non-suppurative disease of the middle ear is, with certain exceptions, very unsatisfactory. The classification of the conditions included under non-suppurative disease of the middle ear is not yet agreed upon, but for discussion of treatment the following rough divisions will suffice: (1) Acute non-suppurative otitis media. (2) Early stages of chronic non-suppurative catarrh. (3) Advanced stages of the same. (4) Middle ear adhesions, the result of former acute inflammation. (5) Sclerosis resulting from disease of the bony capsule enclosing the internal ear, and forming the inner wall of the tympanic cavity, and this is not a catarrh at all.

Treatment of Non-Suppurative Acute Otitis Media.—Teach mothers to put a mustard leaf behind the ear instead of a septic onion and such like into the external meatus, and then fewer would run on to suppuration. In the earliest stages, gentle, not forcible, politzerization (not catheterization) will often relieve the pain at once, and tend to cut short the attack. Counter-irritation behind the ear is always most valuable, and will often arrest the otitis and relieve the pain. Instillations are only occasionally advisable; when used, should be strong anodyne solutions—for example, cocaine or morphine—in an antiseptic medium. Glycer. acid carbol. has been strongly recommended; also adrenalin with cocaine, but he does not think them of much service. Heat in the form of very hot fomentations, or hot bran bags, is very useful. Leeches in front and below the ear are valuable in very acute cases. Incision of the membrane is called for when there is marked bulging of the membrane. The meatus must be purified and afterward dressed antiseptically to avoid suppuration. Purgatives are nearly always necessary. Phenacetin or antipyrin, etc., may be given to relieve the pain. Pharyngeal treatment is usually required, but nasal douches or irrigations must absolutely be avoided. Politzerization should always be employed; will restore the hearing and prevent adhesions. If adenoids are present they must be removed.

Treatment of Advanced Stages of Chronic Middle-Ear Catarrh.—This is much less satisfactory, on account of the adhesions causing retraction of the membrane and fixation of the membrane and ossicles. Catheterization is often preferable to politzerization, but the value of courses of repeated inflations has been much overrated. Patients must be warned against the constant recourse to Valsalva's method of inflation; at the same time, cautiously employed it is of value. Gentle suction by means of Delstanche's masseur is occasionally of value, but may easily be overdone. We have yet to learn the value of the rapid suction massage recently introduced. The Eustachian bougie has been overrated. The objections to its use are: First, the risk of injury to the delicate ciliated mucous membrane; the narrow part of the tube being bony, it cannot be dilated except at the expense of this mucous membrane;

secondly, in advanced cases the loss of hearing power is almost always due to changes in the tympanic cavity and not in the Eustachian tube. Nasal irrigations of sterile alkaline and saline solutions are of much value. Inhalations of the ammonium chloride fumes, with cautious Valsalva's inflation to introduce them through the Eustachian tubes, form a most valuable treatment, but long-continued use, with intervals of rest, is necessary. Injections through the Eustachian catheter are much employed by some surgeons, and are occasionally of value; probably a sterile solution of sodium bicarbonate is the most efficacious. Occasionally, when the mucous membrane is glazed and dry, small doses of potassium iodide with ammonia, so as to produce slight symptoms of coryza, combined with some form of inflation, will yield excellent results. Turkish baths are of value in some of the less advanced cases.

Hard Paraffin in Nose Deformities.—Dr. Walker Downie, of Glasgow, spoke of his experience in 100 patients, in the past two and one half years and concludes: That the operation of the subcutaneous injection of paraffin to raise a sunken nose, if properly performed, is practically devoid of danger. Further, where the deformity is of the nature of a sinking-in, and where the skin covering the sunken area is healthy, the shape of the nose can in all cases be improved, and in most the deformity can be by this means wholly removed. This operation, by modifying or removing a disfiguring and prominent deformity, is the means of conveying much comfort to the individual operated upon.

SECTION ON MEDICINE.

A Disseminated Form of Croupous Pneumonia in Children, or Primary Bronchopneumonia.—Dr. Samuel West, of London, drew attention to the fact that acute pneumococcal inflammation in the child often occurs in a disseminated form. Acute inflammation of the lung presents itself in two forms: in the one as a massive consolidation, in the other as disseminated patches. The massive consolidation is the type in the adult; it often comes on without previous illness or obvious cause, and is therefore called idiopathic or primary. The patchy or disseminated form is the type in the child. It usually follows bronchitis, and is therefore called secondary consecutive pneumonia, or more commonly bronchopneumonia. Massive consolidation is rarely met with in children. At St. Bartholomew's Hospital, during a period of ten years, there were admitted 412 cases of bronchopneumonia, of which 82 per cent. were under five years of age. During the same period, 1,786 cases of lobar pneumonia were admitted, of whom only 14 per cent. were under the age of five years, the relative frequency of bronchopneumonia at this age-period being as 6 to 1. The description usually given of bronchopneumonia in children would lead to the conclusion that it was rare, except as the result of bronchitis. Yet this is not so. On the contrary, a considerable number of the cases occur without antecedent bronchitis, begin and end just like the acute pneumonia of the adult, and might be regarded as such, except that during life the physical signs show, and in fatal cases the post-mortem examination demonstrate, not massive consolidation, but disseminated patches.

Bacteriological evidence, then, so far as it goes, shows that in the primary cases of bronchopneumonia the pneumococcus is almost as frequently found as it is in the acute pneumonia of the adult, and thus confirms the conclusion to which clinical observation leads—that primary bronchopneumonia is of pneumococcal origin. It seems, therefore, fair to draw the following conclusions: (1) That the primary and secondary bronchopneumonia have a different bacteriology. (2) That primary bronchopneumonia. is of pneumococcal origin. (3) That pneumococcal inflammation is almost as common in the child as in the adult. (4) That it takes a different form in each, usually leading to massive consolidation in the adult but to disseminated patches in the child. In other words, lobar pneumonia and primary bronchopneumonia are the same disease. There are many peculiarities of structure in the child's lung which seem adequate to explain why inflammation of the lung in a child should take a different form from that which it presents in the adult.

Human and Bovine Tuberculosis.—Dr. Nathan Rau reiterated the theory which he put forward twelve months ago at the British Medical Association in Swansea, and which he believes is thus supported by eminent authority, namely, that the human body is affected by two varieties of tubercle, one producing phthisis pulmonalis, and generally attacking adults; the other bovine tuberculosis, attacking children during the milk-drinking period and producing bovine tuberculosis in children. In his original paper he expressed the opinion that these two diseases were antagonistic to each other in the human body, and that children who have suffered from bovine tuberculosis in the form of strumous glands, spinal disease, strumous joints, etc., did not develop true phthisis pulmonalis in later life—in fact, he argued that this mild bovine infection conferred a certain immunity against phthisis in the same way as vaccination and smallpox. This theory has also received great support by the work of Dr. Römer, of Marburg, who has been endeavoring to immunize cattle against tubercle. The only strain of tubercle bacilli which he finds produces complete immunity is the human strain, and by using human bacilli he has been able to immunize over 1,000 cattle, not one of which has contracted tubercle, although repeatedly exposed to infection by living in the same stalls with infected cattle. If human bacilli will protect cattle, it is natural to suppose the converse—that bovine tubercle in children will protect them against human tubercle or phthisis. He concluded by expressing the opinion, based almost exclusively on clinical and pathological evidence, that human and bovine tuberculosis are separate and distinct varieties of disease, as shown by Professor Koch; but that the human body is susceptible to both, and especially to bovine tuberculosis in the early periods of life. The two diseases are so rarely seen together in the human that there seems to be some ground for presuming that they are antagonistic to each other, and that bovine tuberculosis may possibly confer an immunity against human tuberculosis. If this opinion should prove correct, he ventures to submit that it would reconcile the conflicting opinions which have been so frequently expressed during the last two years on this most terrible of all diseases.

Heart Disease in Pregnancy.—Dr. J. Mackenzie, of Burnley, discussed this topic, showing many charts and diagrams. In regard to the question of pregnancy occurring in women with valvular disease, the following conclusions may be drawn from this study: (1) When there is a distinct evidence of failure of compensation, or when the patient is liable to frequent attacks of failure of compensation, pregnancy should be forbidden. (2) With fair compensation, if there should be paralysis of the auricle, as evidenced by the presence of a diastolic murmur and the absence of a presystolic murmur, or of a continued irregularity of the pulse, or of a jugular pulse of the ven-

tricular type, pregnancy should be forbidden. (3) With fair compensation, with a mitral murmur systolic or presystolic in time, with the apex beat within the nipple line, and due to the left ventricle, the patient may undertake the burden of pregnancy. In all cases of valvular disease, when conception has taken place, the patient should be kept under close observation. One feature of great prognostic significance is the presence or absence of symptoms of edema of the lungs.

Role of the Lymphocyte.—Dr. G. Lovell Gulland, of Edinburgh, opened a discussion on this subject, taking up the question of the Nature, Relations, Origin, and Function of Lymphocytes. The first question which it is desirable that should be answered with some approach to unanimity is, What is a lymphocyte? Of the so-called non-granular cells of the blood most authors, following Ehrlich, distinguish four varieties: Small lymphocytes, large lymphocytes, large mononuclears, and transitional cells. There is a general agreement that the small and large lymphocytes are identical, the small being the younger form. Ehrlich says that the mononuclears are to be strictly separated from the lymphocytes, and that this separation is "founded on the fact that they differ entirely in their whole appearance from the other type, and that transitional forms between them are not to be observed." He defines them as cells two or three times the size of a red corpuscle, with a large oval, and generally eccentric nucleus, staining rather feebly, and with a relatively large amount of protoplasm free from granules, weakly basophile, and, in contradistinction to the lymphocytes, less basophile than the nucleus. They become transformed in the blood (according to Ehrlich) into the transitionals, which are to be distinguished from them by the possession of a more or less horseshoe shaped nucleus, which has a rather greater affinity for stains, and by the appearance of a few neutrophile granules in the cytoplasm. These cells are supposed to be transitional between the large mononuclears and the polymorphonuclear neutrophiles. Gulland's own view is that the lymphocytes, mononuclears, and transitionals are merely stages in the development of one type, and that there is no relation between the transitionals and the polymorphs. There are four assigned reasons for the distinction between lymphocytes and mononuclears and transitionals: (1) The cytoplasm of the latter is not so basophile. (2) The nucleus is relatively smaller in the case of the mononuclears, and differently shaped in the case of the transitionals. (3) The presence of granules in the transitionals. (4) The larger size of both sets of cells.

1. The cytoplasm of the larger cells is not so basophile, simply because there is more of it and the basophile parts of it are less crowded together. All the members of the group have a cytoplasm, of which the ground is very faintly basophile, and in all four members the depth of tint which this assumes is much the same. The strands and nodes of the cytoplasmic reticulum which traverse this ground substance vary a great deal in thickness and in closeness of apposition, not only in different cells, but in different parts of the same cell. The thicker the strands and the more closely they are apposed the more basophile do the cells appear to be. Thus, in small lymphocytes in which the strands are short and densely crowded together, the cytoplasm looks almost homogeneously basophile to superficial observation. In larger cells the astrosphere is always left free, and as the amount of cytoplasm increases the strands are more separated, become thinner and are not so basophile. But until the cytoplasm attains a very large size in the large mononuclears there is always some part or parts of it which show the original structure and deeper basophile staining. Ehrlich has himself noted that in the neutrophile series the younger cells are more basophile than the older.

2. The shape and staining of the nucleus. This, in leucocytes, is a matter of no importance. All are agreed that the neutrophile myelocytes and polymorphs belong to the same series, but what nuclei could be less alike than the pale oval one of the myelocyte and the dark twisted one of the polymorph? But not only is the polymorph derived from the myelocyte, but, as Ehrlich says, one has only to examine any film of pus to find that the polymorphous nucleus can and does become oval again, and, further, the eosinophile sputum of certain asthmas contains countless cells which, if they were in the blood or marrow, one would unhesitatingly call eosinophile myelocytes, though the eosinophiles in the blood of the same case all have polymorphous nuclei. M. Heidenhain's researches, which explain satisfactorily all the changes undergone by leucocyte nuclei, have met with far too little attention from both pathologists and hematologists. The cytoplasm consists of a ground substance in which are imbedded radii which have their center in the centrosomes, astrosphere, or attraction sphere. When the cell is in a state of rest the pull of these radii tends to bring the astrosphere to the center of the cell. The usual obstacle is the nucleus, and in cells with a small amount of cytoplasm, for example, lymphocytes, the pull is not strong enough to bring this about. As the cytoplasm increases in amount the pull becomes stronger, and the nucleus is pushed to one side and ultimately deformed, becoming first kidney shaped and finally horseshoe shaped, at which stage the astrosphere comes to rest in the center of the cell, for example, transitionals. But in some cases the cytoplasm is relatively very large in amount, and here the astrosphere can reach the center of the cell without causing any deformation of the nucleus, for example, large mononuclears. If a nucleus is about to divide, it probably usually swells up and reassumes the circular form first. If a cell begins to move, the nucleus moves with it, and may be secondarily deformed by movement—for example, polymorphs, eosinophiles, and some transitionals—and, of course, the more ameboid the cell the greater the deformation is likely to be. It will be obvious how this rule explains the shape of the nuclei of leucocytes, and why the nuclei of the more ameboid series (neutrophile, eosinophile, basophile) are so frequently polymorphous, while those of the lymphocytes, or less ameboid series, are only occasionally polymorphous, though transitionals have a polymorphous nucleus much more often than is supposed. The depth of staining of the nucleus in different cells depends on the spacing of its chromatin, in the same way as in the cytoplasm.

3. The presence of granules. The granules of the other series are really the nodal points of the reticulum of the cytoplasm, and Gulland's observations have since been confirmed by Arnold and others. In this sense all lymphocytes are granular, for there are nodal points in their cytoreticulum as in the others; but they are generally much less conspicuous, and in the smaller lymphocytes are often concealed by the thick strands. In the large lymphocytes, mononuclears, and transition-

als they often attain a considerable size, and it has been shown by studies with the Romanowsky stain and its modifications that they are not neutrophile, but take up the methylene-azure of that stain. Wolff, indeed, regards them as specific for the lymphocyte series, and their presence in all the above cells furnishes another proof of the identity of the different forms. That the granules cannot be demonstrated in all lymphocytes seems to depend on conditions of solubility not unlike those of the mast-cells, and one often finds negative pictures of them.

4. Size of the cells. The mononuclears are always large cells—their large amount of cytoplasm necessitates this—but some transitionals are no larger than a medium-sized lymphocyte. The size of the mononuclears and transitionals seems largely to depend on the taking up of fluid—in the blood at least—as the strands of the reticulum are often widely separated, and these cells are obviously soft, as may be seen from the way in which they are indented in films by the red corpuscles, which does not happen to the smaller members of the series.

The Function of Lymphocytes.—There is, of course, no doubt that they are largely protective, especially when present in lymph glands, etc. It is not yet settled whether those of the blood are directly protective, whether they are present there in process of being carried to reinforce lymphatic tissue, or whether they are nutritive, or have some other function. On the one hand, it is difficult to imagine that the millions present in the blood are concerned only with defence; on the other, the facts of leucocytosis show how rapidly the polymorphs have to be increased on occasion, and how great this increase may have to be. We are apt to forget that our bodies are constantly being attacked by organisms, and that illnesses represent only the more vigorous attacks attended with some measure of success. It is interesting to note that the main dépôts of lymphocytes, apart from lymph glands and marrow, are round the hollow tubes of the body, the alimentary and respiratory tracts, and that these are the places which are occupied by saprophytic, nonvirulent, or attenuated organisms. It seems possible that lymphocytes are adapted and sufficient to keep these in check. They are certainly not sufficient to resist virulent infections, which have to be met by polymorphs. Lymphocytes multiply so easily in connective tissue that the small percentage in the blood is enough for reinforcement and for direct protection there; polymorphs do not multiply well in connective tissue, hence their percentage in the blood must be higher.

The Etiology of Leucemia.—Dr. T. Gillman Moorhead, of Dublin, spoke on this subject. Since the first recognition of leucemia as a distinct clinical and pathological entity some sixty years ago, this disease along with most others that principally affect the blood-forming tissues, has remained an etiological puzzle, and, although many have investigated the subject and some few have attempted to produce the disease experimentally in the lower animals, no definite and confirmed result has as yet been reached. Of late, discussion and investigation has principally centered around the inter-relationships of the different diseases to which the generic term leucemia is applied, and attempts have been made to prove that they are all primarily diseases of the bone marrow. It was not his intention, however, to enter into this discussion, or to consider the supposed different functions and properties of the various forms of white blood corpuscles. It is sufficient to state that both the lymphatic and splenomedullary type of disease, appear to be essentially the result of morbid changes in the hemopoietic tissues, and that in both diseases, changes in all parts of these tissues may be expected to occur. The close physiological connection of the spleen, bone marrow, and lymphatic glands has indeed been shown by their universal reaction to lymphotoxic and myelotoxic serums as proved by Flexner. Moreover, the occurrence of cases, in which, as far as the blood itself is concerned, the type of disease changes, by a myelocythemia becoming converted into lymphocythemia, supports Flexner's results, and is referred to, in order to point out that in experiments attempting to produce either form of leucemia, the actual production of any changes in the hemopoietic tissues will have a positive value. The various theories that have been propounded concerning the etiology of the disease may be reduced to two, namly (1) the parasitic theory, and (2) the toxic theory. Writing in 1898, Robert Muir states that no parasite of the nature of the malarial organism has been observed in leucemia, and that there is no adequate evidence that any bacterium is concerned in the disease. Since that date, however, Löwit has described an ameboid organism which he calls the *Hæmamœba leucæmiæ magna,* and which he states can be demonstrated by special staining methods in the blood and tissues of patients suffering from splenomedullary leucemia. A similar but smaller organism, which he terms the *Hæmamœba leucæmiæ parva,* is to be found, according to the same observer, in the blood of lymphatic leucemia patients. These organisms are stated to form spores and to pass through stages very similar to those of the malarial parasite. They have not as yet been artificially cultivated. By injections of fresh tissues obtained from leucemia patients immediately post mortem Löwit claims to have produced in rabbits pathological changes which closely resemble those found in myelogenic leucemia, and to have found the hemameba in the diseased parts. Similar injections into dogs, cats, and guinea pigs did not produce any changes. These results have not as yet been confirmed, although it is now more than three years since the date of their publication. The author further spoke of the toxic theory and gave a series of his own experiments leading to no definite conclusions.

(To be Continued.)

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, held November 14, 1904.

The President, T. E. Satterthwaite, M.D., in the Chair.

Cirrhosis of the Liver and its Treatment.—A discussion on this subject was the order of the evening, and it was opened by Dr. Leonard Weber. He said that in his experience fatty cirrhosis was almost as frequent as Laennec's. In the latter, after a more or less pronounced stage of hypertrophy, the liver begins to retract, and then, with or without periods of intermission, goes on to atrophy. He thought the hypertrophic form of cirrhosis, described by French writers, must be very rare in this country. He had never met with but one instance of this, although on two or three other occasions he believed that he had such a case under observation, but presently retraction set in. In Glissonian cirrhosis we have practically a perihepatitis. In atrophic

cirrhosis we have long been accustomed to consider the condition as a primary disease, and the accompanying splenic tumor as due to passive congestion; but quite recently it has been contended that this was a mistake and that hepatic cirrhosis should be placed in the category of blood diseases, along with anemia and leucemia. Under this hypothesis the enlargement of the spleen is of primary importance, and in the opinion of some the origin of the condition in the liver.

Statistics of Cirrhosis.—Dr. James K. Crook spoke of the importance of an early diagnosis, saying that if it was to be of use to the patient, the diagnosis should be made in the early stage of the disease. In considering the diagnosis one must inquire into the causation of hepatic cirrhosis. What are the factors producing it? In which sex, at what age, and under what conditions of life does it most frequently occur? In the records of the New York Board of Health for the last decade of the nineteenth century the ages of the patients dying from the disease are found to be as follows:

Under one year	9
Under five years	11
From 5 to 10 years	11
From 10 to 15 years	9
From 15 to 25 years	553
From 25 to 35 years	1061
From 35 to 45 years	1196
From 45 to 55 years	959
From 55 to 65 years	565
From 65 to 75 years	140
From 75 to 85 years	14

These figures corroborate observations previously made. While no period of life is exempt, by far the greater number of cases occur in adult middle life. Over 68 per cent. occur at this period and over 62 per cent. in males. Another point of interest is the nationality of the patients. In New York 26 per cent. of the cases referred to occurred in native born Americans, and 73 per cent. in aliens. Among the latter, the Irish are a little in the lead, but the Germans make a very close second.

Causation.—The use of alcohol is regarded as the leading cause of the disease, and so experienced an observer as Murchison stated that he had never seen a case except in those addicted to it. The strong distilled liquors are usually supposed to be especially productive of cirrhosis, but it is also found to be common among those principally using malt liquors, as the Germans, while Lancereaux attests its frequency in France, where the common beverage is vin ordinaire. Other causative factors were then referred to. Syphilis has been recognized as one ever since Virchow's classic work on the subject. Out of 37 cases at the Roosevelt Hospital, a syphilitic history was obtained in three. In countries like southern Italy, where malaria is endemic and chronic, there appears to be a clear connection between this affection and cirrhosis, but in climates such as ours the relation is difficule to trace. Osler states that at the Johns Hopkins Hospital he has never met with a case in which malarial disease resulted in cirrhosis. Other causes which have been assigned are typhoid fever, yellow fever, and other infectious diseases, and the use of highly seasoned food.

The Pathological Anatomy of Hepatic Cirrhosis.—Dr. Frank Grauer read a paper on this topic. The three most frequent forms met with are the atrophic, the hypertrophic, and the syphilitic. In the atrophic or multilobular, the common variety of the disease, the reduction of the size of the liver is not invariable. In many instances the organ retains its normal size, and sometimes it is moderately enlarged, this enlargement being due, as a rule, to fatty infiltration of the liver cell. The liver is tough and inelastic, and its external surface is marked by a number of hobnail-like projections of varying size. The whole organ is found to be beset with a network of cicatricial tissue enclosing rounded islands of liver substance. Each island is made up of several lobules, but the compression to which they have been subjected may render their individual recognition difficult or impossible. In the early type of the disease microscopical examination shows clear evidence throughout of inflammatory change in the tracts of the connective tissue which supports the ramification of the portal veins. The so-called portal canals are packed with leucocytes and connective tissue cells in a state of active proliferation, and here and there columns of fibrifying tissue may be seen advancing between the twin cells. By the junction of such columns a wide-meshed network of developing tissue comes into being throughout the entire organ. In the late stage this network is seen to consist of dense fibrous tissue which has generally lost the highly cellular character seen at an earlier period. Such tissue has a strong tendency to contract, and thus it compresses the liver cells contained in the lobules. Some of the latter undergo atrophy and absorption, so that there are formed extensive tracts of whitish gray color, consisting of fibrous tissue, with only a few isolated groups of hepatic cells. In advanced cirrhosis the liver cells are invariably degenerated. They are also filled with large fat globules (fatty infiltration). The branches of the portal vein become compressed, narrowed and obliterated, and in some cases there is an apparent development of a few bile ducts in the strands of the fibrous tissue. The condition of the blood vessels is remarkable. If the hepatic artery be injected, it is found that the new fibrous tissue, which looks quite bloodless, is abundantly supplied with vessels from that source. Occasionally there is seen evidence of an arteriosclerosis or an endarteritis obliterans of the hepatic artery. The portal veins may show thickening of their walls with a peri- or endophlebitis. The changes in other organs, due to the portal obstruction, are enlargement of the spleen, passive congestion of the stomach and intestines, induration and congestion of the pancreas, and ascites.

Hypertrophic Cirrhosis.—In hypertrophic or unilobular cirrhosis the liver is increased in size and weight. The surface is smooth or finely granular and of a tough consistence, but does not present the leathery hardness met with in the atrophic form. The capsule is often somewhat thickened, but there is seldom the degree of thickening or of perihepatitis seen in the latter. In the majority of instances the liver is jaundiced. The cut surface is more minutely subdivided than in the atrophic form, and the cicatricial bands are finer. Microscopically, a new development of fibrous tissue is seen throughout the organ, and this with considerable uniformity surrounds the individual lobules, while in many cases it invades the lobules to some extent from the periphery. The peripheral cells are thus separated from each other and from the lobules, so that they come to lie stranded in the new tissue. The cells thus implicated are usually in a state of atrophy. In nearly all cases a remarkable plexus of bile ducts, of varying size, is found embedded in the new tissue. The mode of origin of these ducts is somewhat obscure, and the explanation given by Cornil

is probably the most satisfactory. The question has often been raised whether in this form of cirrhosis the primary process is an interstitial inflammation, followed by secondary destruction of the secreting cells of the lobules, or a primary toxic atrophy of the epithelial cells, to which the fibrous growth is secondary; and the weight of evidence is strongly in favor of the atrophy being secondary.

Syphilitic Cirrhosis.—This may be either congenital or acquired. In the congenital form the liver is large, firm, smooth and mottled, and careful inspection usually shows throughout the whole organ the presence of grayish or white points and lines corresponding to the interlobular new growth. Microscopically, there is seen great increase of the connective tissue, while in many places foci of small-celled infiltration are found. The new tissue passes within the lobules and between the liver cells, often surrounding and isolating individual cells (the so-called pericellular cirrhosis). Miliary and large gummata may be present. In the cirrhosis resulting from acquired syphilis, also there are fibrosis and gummata. In the early stage the latter are pale and grayish nodules, varying from the size of a pea to that of a marble. The large ones present yellowish centers at first, but later there is a pale yellowish cheese-like nodule, surrounded by a fibrous zone, the outer edge of which loses itself in the lobular tissue, which generally diminishes and becomes destroyed. The gummata show a tendency to undergo fibrous change, and when numerous they produce by their gradual healing the most extensive deformity of the liver. Occasionally the syphilitic changes are manifested in a thickening of the capsule, producing a perihepatitis and increase in the connective tissue of the portal canal.

Surgical Treatment.—The discussion on the surgical treatment was opened by Dr. Robert T. Morris. In certain cases of hepatic cirrhosis, he said, the production of venous anastomosis, as advocated by Talma and later by Morrison, appeared to be called for. Personally he had operated in seven cases, all of alcoholic origin. In two of these the cirrhosis was hypertrophic, and in both the result had been very satisfactory. In the five cases of atrophic cirrhosis the results were not satisfactory, four of the patients having died. In the fifth case he hoped for a better result, but only a short time had now elapsed since the operation. In cirrhosis the average duration of life after the occurrence of ascites is dated to be six months, and in the four patients operated on who died it was not as long as that. They appeared to feel better as the result of the operation, but this may have been merely a mental effect. Dr. Morris thought it important that the operation for making the venous anastomosis should be performed in as short a space of time as possible, as this class of patients did not stand shock well. He would allow but ten minutes for the whole operation. In order to save time he was accustomed to use a brush, which he had devised, for quickly removing endothelium. It was also important to close the abdomen immediately after the operation, instead of using drainage. Dr. Weber had expressed the opinion that the relief from ascites was practically due to the mere opening of the peritoneum, as in peritoneal tuberculosis. In tuberculosis the hyperleucocytosis, thus produced, was destructive to the bacilli; but in cirrhosis the condition of affairs was different, and venous anastomosis appeared to be called for.

Dr. George R. Fowler reported a case operated on during the past summer by Dr. Russell S. Fowler. The patient, a man of fifty-six years, was admitted to the medical service of the Brooklyn Hospital on July 24. He acknowledged being moderately addicted to alcohol, but denied having had syphilis. One year ago he began to suffer from what he called malaria, and about the first of May his abdomen commenced swelling. At the time of admission it was enormously distended, and after having been tapped twice, he was transferred to the surgical service of the hospital. Examination showed the liver to be small and the spleen slightly enlarged. On August 24 a median laparotomy was performed, the incision extending ten and a half inches downward from the xiphoid cartilage. A very large amount of serous fluid having been evacuated, the liver and spleen were scarified with a piece of rough crash, like Turkish toweling, and also with the edge of the knife. The round ligament was then shortened, and the liver sutured with chromic gut to the abdominal wall and the diaphragm. The omentum, which was small, was also sutured to the abdominal wall, from side to side, and finally the abdomen was closed with crossed sutures of chromic gut. Ascites returned during the first week after the operation, and was absorbed during the third week. In the second week a hypostatic pneumonia supervened, and the patient was kept constantly in a sitting posture. Since that time there had been no further accumulation of fluid. He was discharged September 28, and is now in good condition. This patient was presented by Dr. Fowler to the Association. Dr. Fowler went on to say that ascites, occurring in the course of cirrhosis of the liver, is looked upon as a direct result of obstruction to the portal circulation, due to the pathologico-anatomical changes incident to the disease. Without doubt a certain amount of obstruction to the circulation in the liver is tolerated by the general intra-abdominal circulation and compensated for by the presence of anastomosing veins between the systems of the portal vein and the inferior vena cava. That these are not sufficient for the purpose in all instances of hepatic cirrhosis is now generally admitted; but that a large number of cases of this disease are thus properly compensated is shown by the statistics of Lange, who records that out of 115 fatal cases of cirrhosis, in 65.6 per cent. there never was any ascites. Therefore, it may easily happen that there will be all degrees of compensation in different individuals, as well as all grades of demand for such compensation; from the patient with but slight need for the existence of compensating vessels—and yet the latter insufficient for such need—to the case in which the obstruction is considerable—and yet the anastomosis sufficient to meet the demands made upon it. The object of the Talma operation is to strike the balance, as it were, between the obstruction as it exists and the facilities afforded by the natural channels for compensating for the obstruction. Without doubt there is more or less compensatory dilatation of these already existing channels in some cases, as shown by the development of the caput medusae. That these finally fail in a certain proportion of instances is likewise true. It is also a fact that even with the additional channels afforded by the operation, only about one-third of the cases operated upon remain free from ascites. Greenough's statistics show 60 per cent. of failures, these being about equally divided between those who died as a result of the operation and those who were not improved by it. As to the dangers of the operation, there is a mortality of nearly 30 per cent. attached to it; to

say nothing of the risks of auto-intoxication attending the diversion of a certain amount of blood from the mesenteric veins directly into the general circulation, as shown by the experiments of Eck, Hahn and Tillmann.

Rationale of the Talma Operation.—The rationale of the operation depends upon the development of vessels of communication between the portal system and the general system directly. This may not be demanded early in the case, and may never be required. When the normal channels prove insufficient the operation should be done at once; not waiting for repeated tappings and hence great debility of the patient. In order to attain all that can be accomplished by the operation, in addition to substituting it for the second or third tapping at the most, care should be taken to provide adhesions sufficient in extent, and the vessels of which, dilating as the demand is made upon them, may serve to maintain the balance between the obstruction on the one hand and the intra-abdominal vascular tone on the other.

Many Tappings Sometimes Tolerated, and with Benefit.—Dr. Frank Grauer said that in his own experience Hale White's dictum was not borne out, and patients could sometimes stand many more than six tappings. He had in mind particularly a case which came under his care in January, 1899. He was seen in consultation by Dr. A. A. Smith, who thought the case a very bad one and expressed the opinion that the man could not live more than three months. He had atrophic cirrhosis and was suffering from diarrhea and marked ascites. At the first tapping 5½ gallons of fluid were withdrawn and some days later, at the second tapping, nearly five gallons more. Later in the year the patient was seen by Dr. E. G. Janeway, who thought he might perhaps live six months longer. Between January, 1899, and December 20, 1900 he was tapped, in all, 21 times, the amount of fluid withdrawn at the different tappings varying from three to five gallons. For nine months after the last tapping there was no return of the ascites. At the end of that time he suffered from an attack apparently brought on by an overindulgence in the pleasures of the table, and died from auto-intoxication.

BOOK REVIEWS.

RADIOTHERAPY AND PHOTOTHERAPY, including Radium and High Frequency Currents, their Medical and Surgical Applications in Diagnosis and Treatment. By CHARLES WARRENNE ALLEN, Professor of Dermatology in the New York Post-Graduate Medical School, with the cooperation of Milton Franklin, M.D., and Samuel Stern, M.D. Lea Brothers & Company, New York and Philadelphia.

IT is a striking illustration of the energy of the mind of the medical man to find no less than five or six large works on radio and light therapy, that have been published in very recent years.

The time had seemed ripe when the general settings of the whole problem had been dimly outlined, and in Dr. Allen's work we think we find for the first time a sense of the perspective of the whole subject of light therapy, as it now appears.

From the practical point of view the practitioner will find an able and thoroughly practical work, not on X-ray work as applied to the diagnosis of disease, but of the whole subject of the physiological and pathological relationship of light energy manifestations.

It can be commended most heartily and Dr. Allen himself should be congratulated on the excellent showing he and the publishers have made of this most fascinating subject.

A TREATISE ON BRIGHT'S DISEASE AND DIABETES. With special reference to Pathology and Therapeutics. By JAMES TYSON, M.D., Professor of Medicine in the University of Pennsylvania, etc. Second Edition, Illustrated. Including a section on the Ocular Changes in Bright's Disease and in Diabetes. By George E. de Schweinitz, M.D., Professor of Ophthalmology, in the University of Pennsylvania. P. Blakiston's Son & Co., Philadelphia.

IT is now fully thirteen years since the first edition of this work originally saw the light, and the book has now been out of print for many years. Necessarily, the second edition varies in many very important particulars from the first, for the intervening period has been rich in contributions, especially to the theory of the so-called "Stoff-wechsel" diseases. However, the diagnosis and treatment of renal conditions have considerably amplified and improved. It may be cheerfully conceded that everything of value has been incorporated in this second edition, although the original plan and scope of the work has simply been enlarged to accommodate this new material. It is still characterized by its tendency to seek a pathological basis for the clinical conditions, a standpoint which puts it on an equal footing with the best that is being written in Germany at the present day. The sections on the eye-symptoms are an extremely valuable constituent of the work, and have very properly been entrusted to the hand of a specialist. The therapeutics are simple, yet full, and calculated to meet all the emergencies of this protean disease. The illustrations, with the exception of the colored plates representing pathological conditions of the kidneys, are in general excellent, and the make-up of the book leaves nothing to be desired.

THE DOCTOR'S RED LAMP. (The Doctor's Recreation Series. A book of short stories concerning the doctor's daily life, selected by CHARLES WELLS MOULTON. The Saalfield Publishing Co., New York, Chicago and Akron, Ohio.

THIS volume contains a number of very interesting sketches illustrating the physician's many points of contact with life in its various phases. There is the "Doctor of the Old School," by Jan Maclaren, and one of Dr. Conan Doyle's medical stories and Margaret Oliphant's Dr. Barrere, as examples of the familiar, though also as an index of how well selections are made. Physicians and their wives may well pass some very pleasant hours in the reading of these sketches, which are printed on excellent paper, in good, large, untiring type, so that one is tempted to take the book up when other books pall. There are some well reproduced illustrations of incidents in medical life to add to the interest.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION. Vol. XX, 1904.

THIS volume of transactions contains, as usual, many articles of interest to more than the specialist in climatology. We note among others articles by Dr. J. O. Cobb, of Los Angeles, on "Is Milk a Factor in Tuberculosis," by Dr. Rob't B. Babcock, of Chicago, on "Cases of Pus Infection Simulating Pulmonary Tuberculosis," by Dr. Jno. W. Brannan, of New York, on the "Home Treatment of Tuberculosis by Means of Hospital Dispensaries," and "The Work of the Tuberculosis Clinic of the Health Department of New York City," by Commissioner Darlington.

A TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT. By D. BRADEN KYLE, M.D., professor of Laryngology and Rhinology, Jefferson Medical College; Consulting Laryngologist, Rhinologist and Otologist, St. Anges' Hospital, etc. With 175 illustrations, twenty-four of them in colors. Third edition, revised and enlarged. W. B. Saunders & Co., Philadelphia, New York and London.

THE third edition of this excellent work presents much new material. Among the alterations and additions those of especial interest are in the chapters on keratosis, epidemic influenza, Gersung's paraffin method for the correction of nasal deformities and the X-ray treatment of carcinoma.

A new departure is the extensive fund of information on the chemistry of the saliva and the nasal secretions and its bearing on diagnosis and treatment. The author's laboratory researches in this department are practically utilized in the discussion of hay-fever, the prognosis of which he regards somewhat more optimistically than many other writers. The discussions accorded to the treatment of each condition are especially valuable and should be of much assistance to the non-specialist on account of their completeness and descriptive detail. Full attention is also accorded to the more purely scientific aspects of the subject and the pathological anatomy of the diseased tissues is well described and illustrated, in many instances by beautifully reproduced colored plates of stained sections.

From every standpoint the book is thoroughly satisfactory and will be found a reliable and practical guide by all classes of readers.

THE SUMMER DIARRHEAS OF INFANTS, their Etiology, Pathology and Treatment. By H. ILLOWAY, M.D., formerly Professor of Diseases of Children, Cincinnati College of Medicine and Surgery, etc. E. R. Pelton, New York.

THE author devotes much space to arguments to prove that the general classification of summer diarrheas is wrong, largely because many of these diarrhea occur also, though much less frequently, in the winter months. He maintains that there are types of diarrhea that are never met with except during the heated months of the year, and to these alone should the term "summer diarrhea" be applied. He calls attention also to the fact that infants almost dying from summer diarrhea, may take a new lease of life from a short outing of a few hours, that no lesions are found in the bowels except in cases of long standing, and that the diseases are non-inflammatory in character. He groups all true summer diarrheas under three heads: Cholera Infantum, Summer Complaint, and Heat Stroke or Thermic Fever. The book is of a size to be easily carried in the pocket. It is to be regretted that the controversial style of the author makes him write as if repeatedly challenging the opinions of his fellows in the pediatric field.

THE MOTHER'S MANUAL. By EVELYN LINCOLN COOLIDGE, M.D. The Woman's Home Library Series. A S. Barnes & Co., New York.

ALTHOUGH it is probable that, should this little volume be widely read and its precepts put into active practice by mothers and nurses, the pediatrician and the "family doctor" might find their annual income somewhat depleted, it will probably be very well received by the profession, and should be in a fair way to gain the measure of success which it certainly merits. The author writes simply, and the book throughout is unusually free from technical terms; she does not "gush," but on the other hand, the book may be designated, in the best sense of the term, as "popular" without being puerile. Dr. Coolidge is thoroughly at home in her subject, as she already ranks as an authority in matters relating to the care and training of little children, and the good sense and sound advice contained between the covers of this little book ought to lighten the burden of many an anxious young mother, and incidentally secure an overworked physician some much needed nights of unbroken sleep, which would otherwise be disturbed by the frantic message that "there is something the matter with baby, and I don't know what."

ESSENTIALS OF NERVOUS DISEASES AND INSANITY: Their Symptoms and Treatment. By JOHN C. SHAW, M.D., late Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital Medical School. Fourth Edition. Thoroughly revised by Smith Ely Jelliffe, Ph.D., M.D., Clinical Assistant, Columbia University, Department of Neurology; Visiting Neurologist, City Hospital, New York. W. B. Saunders & Company, Philadelphia, New York and London.

THERE is probably no book of the same size, in English at least, which gives such clear cut and definite ideas with regard to the knotty subjects of nervous and mental diseases as does this little Question Compend on the essentials of nervous diseases and insanity. Many a physician who has considered that the problem of learning to differentiate, to some degree at least, these affections, is too complex, will by surprised to find how much can be put in a short space and thus readily learned by means of this little volume.

The fourth edition of the book has been brought thoroughly up to date and noteworthy additions have been made both as regards nervous and mental diseases. There seems no doubt that the work will continue to have, and even to increase the popularity which it has heretofore enjoyed.

ELECTRO-DIAGNOSIS AND ELECTRO-THERAPEUTICS. By Dr. TOBY COHN. Translated by FRANCIS A. SCRATCHLEY, M.D., Consulting Neurologist to the Home for Incurables. Funk and Wagnalls Company, New York and London.

TO ALL workers in neurology Cohn's work has been a standard for a number of years. Its appearance in English is a matter of congratulation for, while many works on the subject are available, there is hardly one of which it may be said that it is concise and practical. Whether Electrotherapeutics leads to much writing and little thinking or not is a mooted question, but certainly Cohn's work is nearly all meat, very little superfluous padding."

ELEMENTS OF WATER BACTERIOLOGY, WITH SPECIAL REFERENCE TO SANITARY WATER ANALYSIS. By S. O. PRESCOTT, Assistant Professor of Industrial Biology, and CHARLES E. WINSLOW, in Massachusetts Institute of Technology. John Wiley & Sons, New York.

SO MUCH rubbish is being written about sanitary water analysis that it is a comfort to find a short, sensible treatise like unto the present one. It is, however, very incomplete, and deals only with a few of the organisms of water.

We hope to find that the authors, in a second edition, will give us a larger work, on the order of Frankland, and that they will also include systematic differentials as in Chester's Manual.

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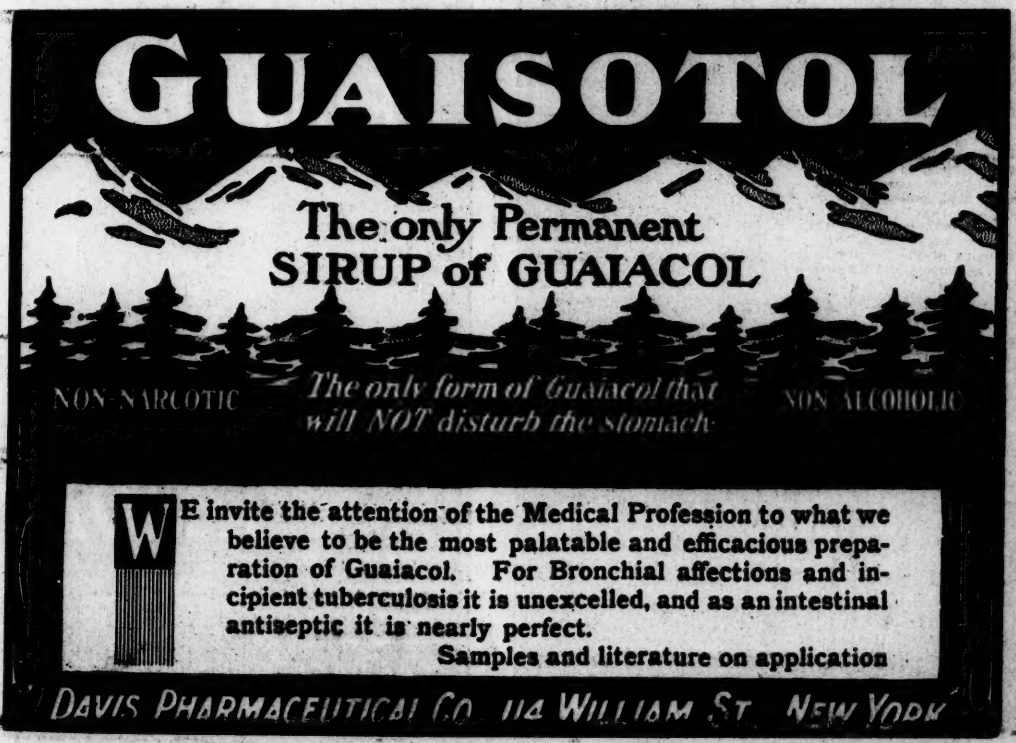
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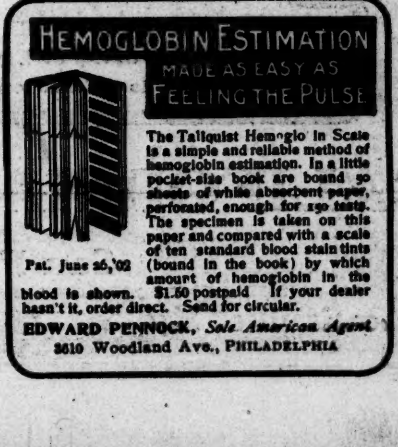

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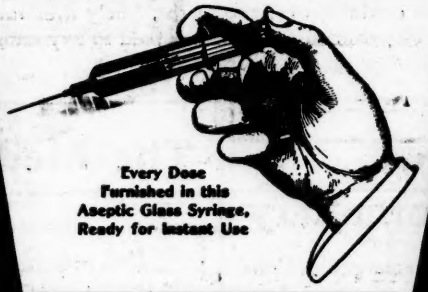

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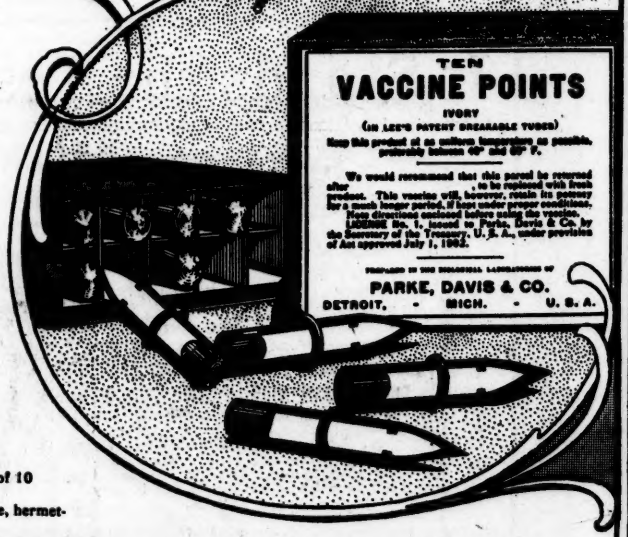

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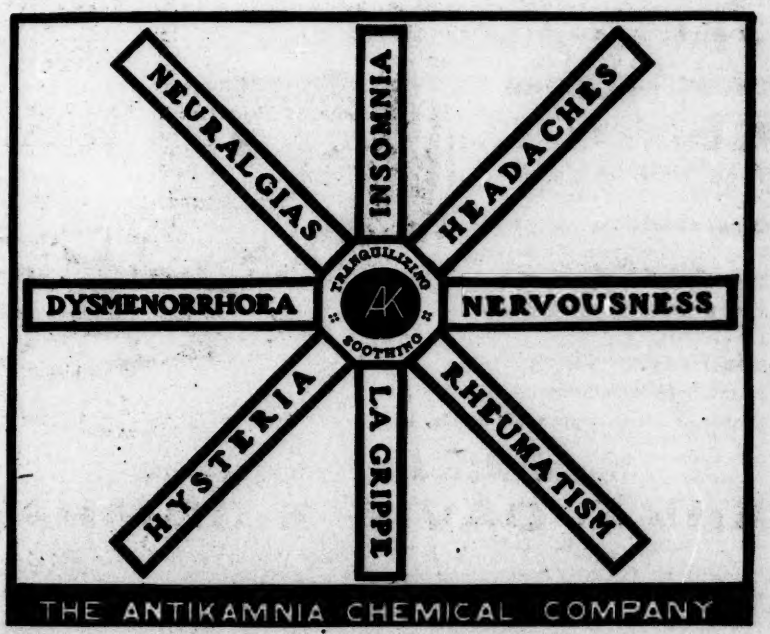

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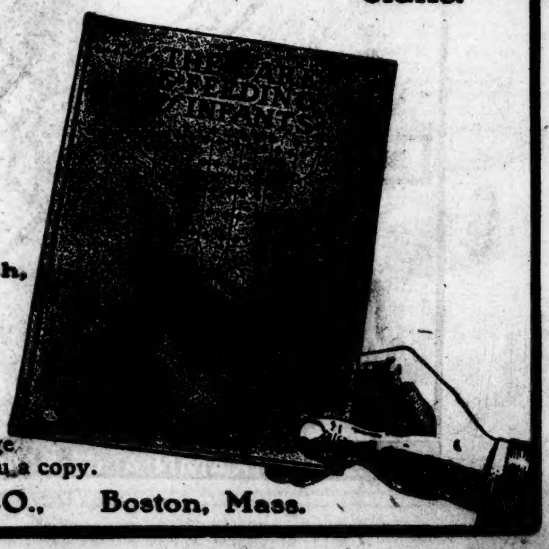

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